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Oil Industry's Troubles are Exaggerated; Industry's Leaders Can Cure Them

By Lawrence E. Smith
N. P. N. STAFF WRITER

CLEVELAND, May 23.

THE great amount of public discussion, through the newspapers, has given the public and the oil industry itself a distorted and exaggerated vision of the present oil situation.

It is high time the oil industry straightened out its own thinking and passed the true picture on to the public.

The public, in the main, now believes:

1. That over-production of crude is general to all fields.
2. That all branches of the industry are affected and may go down together in one grand financial crash.
3. That crude oil prices, because of the over-production, are about the lowest they have ever been and, consequently, the price of gasoline to the public should have declined more than it has.
4. That the oil industry generally feels unable to work its way out and wants relief through some outside agency.

AGAINST these distorted impressions are these facts:

1. Serious over-production of crude is limited to one district—the greater Seminole territory in Oklahoma—and only a handful of companies are causing it or are directly affected by it.
2. The refining and marketing branches of the industry are operating today (or should be) in just about the same way and with just about the same margins to cover their costs as they would have been had there been no over-production at Seminole. There is no chance of any general crashing of the industry providing the industry sees the picture clearly and confines its talking to facts. If present loose talking continues it is certain that investors will throw more stocks on the market and banks all over the country will tighten up on credit for all oil companies.
3. Crude oil prices are not as low today by any means as they have been during past periods of over-production.
4. The oil industry itself, through leadership exercised by the heads of the larger companies can work out its own relief. There are signs that it is beginning to do so.

Evidence of what the public is thinking is reflected by the recent big liquidation of oil securities. The public has gotten into the oil business on a large scale within the past few years. It has recently been getting out because it has heard continually the cry that times will be hard for several years to come. The cry of distress has been heard and the investor is selling.

And it is all caused by one small part of the vast acreage of the United States. Lacking Seminole, or with a Seminole developed on conservative lines and with a view to the market requirements, none of the talk about demoralization of an industry would be heard.

Here is the daily production of all the fields as of the time Seminole began to get its stride and as of May 14.

District	Oct. 2 1926	May 14 1927	Loss or Gain
Oklahoma	470,000	735,550	+265,500
North Texas	212,000	223,900	+ 11,900
West Cent. Texas	98,500	191,150	+ 92,650
Eastern	110,000	113,550	+ 3,550
California	600,000	635,300	+ 35,300
Kansas	115,150	113,900	— 1,250
East Cent. Texas	57,800	39,850	— 17,950
S. W. Texas	44,950	35,200	— 9,750
N. Louisiana	58,200	48,600	— 9,600
Arkansas	151,100	113,550	— 37,550
Gulf Coast	174,400	150,200	— 24,200
Wyoming	67,500	60,900	— 6,100
Montana	20,900	14,050	— 6,850
Colorado	8,500	7,900	— 600
New Mexico	4,750	3,150	— 1,600
	2,193,750	2,486,700	292,950 Gain

There have been gains in west Texas. That district, however, is not a contributor to the markets in the immediate manner that the Mid-Continent is. It has required 20 years of steady building to get set up the network of pipe lines that serve the Mid-Continent. The completion of trunk line systems out of west Texas is months off. This by way of meeting the question: Why restrict Seminole development while other areas go ahead.

Much also is heard about California. Predictions are heard daily that a great flood of oil is about to be started from that state to be absorbed by eastern markets. The best commentary on California is the record of her performance. This is that during the first four months of this year there were shipped from California to Atlantic and Gulf Coast ports 10,790,000 barrels of crude oil, fuel and gasoline and that during the same period of 1926 the shipments totalled 10,955,000 barrels. California's shut in production is pointed to as a menace. It is the best evidence that the California industry is regulating its affairs.

THERE seems also to be the fear of big imports. The figures on this are reassuring. Total imports from foreign countries in the first four months of this year were 20,909,000 barrels and for the same period of last year they were 25,208,000 barrels.

If the same big companies who can control the Seminole situation and the west Texas fields, through their position as buyers of oil, are apprehensive of foreign contributions, then they are merely afraid of themselves, for they control the production and the transportation of those foreign oils.

There is more shadow than substance to the over-production bogy. The statistical position of the industry with respect to stocks today is about what is was at the beginning of 1926 and there was then plenty of confidence in the industry. At the start of 1926, total liquid stocks in the United States were 543,745,000 barrels and at the end of 1926 these had been reduced by 24,282,000 barrels. At the end of March, 1927, the total

Oil Committee's Meeting With Conservation Board Falls Flat

By Telegraph

WASHINGTON, May 24.

THE widely advertised meeting between the Federal Oil Conservation Board and a committee of five industry executives here on Monday afternoon was a short horse and soon curried. It was more precisely a meeting between Hubert Work, secretary of the interior and a committee of four. Doctor Work was the only one of the board that was present and the absence of George S. Davison, vice-president of the Gulf Oil Corp., left a gap in the ranks of the committee. The four who attended were Walter C. Teagle, Robert W. Stewart, Henry M. Dawes and Amos L. Beaty. Mr. Davison withdrew Monday morning from the committee.

The meeting lasted just an hour. It was opened by Doctor Work who read a statement in which he defined the scope of the board's past undertakings and made it plain that the board has no legal powers and cannot approve or disapprove any definite plan. His statement was sympathetic but clearly indicated that the board can do no more than advise on the broad theory of conservation.

Following the secretary's statement, Mr. Teagle spoke briefly. Mainly his talk was a report of the meeting held in New York the week before when tentative plans for another try at shutting down Seminole were adopted. He informed the secretary that Ray Collins, the umpire, will be in New York for the meeting on May 25 and that he will report the results of the survey he has made of the district.

Mr. Teagle said that in a preliminary report Collins had indicated that there were few wells drilling in the Seminole district which were "unnecessary" and that he considered the attempt to effect a shut down of drilling a doubtful expedient. Collins, said Mr. Teagle, will present a recommendation at the coming meeting, the success of which depends upon the complete co-operation of all the producers in the district. What this plan is, Mr. Teagle would not reveal in advance of the meeting. He said the responses indicated that practically every producer in the district will be represented at the New York meeting.

The secretary asked whether Mr. Teagle cared to address himself to the general subject of conservation. Mr. Teagle said the discussion between himself and other executives had been confined to Seminole as that was considered to be the logical starting place.

Thus the meeting came to an end an exceedingly flat affair. The daily press scenting a big news event was represented in force but they went away without their stories.

stood at 543,000,000 barrels again and is now probably a little greater.

There is the case; there are the reasons why the situation is not so completely out of hand as the general gloom would indicate.

What the industry needs now is less talk about how hopeless the situation is and a real, thoroughgoing display of the leadership that falls upon the largest companies in the business. They have it in their hands to stop discovery of new pools, to check drilling. Their power comes through the fact that they are the ones who provide the market for the new oil. One of the first suggestions made by umpire Ray Collins when he got back on the job last week to regulate Seminole was that no new connections be made. Yet the suggestion has been ignored.

Leadership, it now appears, may soon be displayed. The duty that falls upon the strongest companies will be discharged, if the brand of thinking that is being evidenced in private conversation means anything. Some corporate backbones are still to be stiffened and there is a little of the fogginess of thinking yet to be cleared away in some quarters, but that will be done.

THE start has been made by some companies in the offending Seminole district. This is in the direction of paying the price for extensions of leases which soon will expire unless drilling is done.

The next move, refusal by pipe line companies to connect to new wells a hard-boiled piece of action, is up to the purchasing companies. It is obvious to all of them that the continuance of wildcatting on the present extensive scale is due to the assurance, thus far, that a market will be available for the production that is found.

On this lease renewal question, definite progress has been made. The companies that have made the start—and thus far one new pool has been abruptly checked with only the discovery well drilled in—figure it from this standpoint: Why spend money in getting into more wildcat plays and continuing to develop acreage that is less and less certain of returning a profit as over-production mounts; why not take that same money and take renewals where wells otherwise would have to be drilled?

No action has been taken on curtailment of purchases of crude oil as an announced policy, but it is inevitable. The business of storing oil has been confined to a few companies, as the increase in production outside the Seminole district has not been great within the past eight months. The burden has fallen on a few.

The refusal to make new connections is a remedy that has been applied before. It is simple, for it requires no legal sanction. The one thing that is clear in all the discussion of what the law permits or stops is the fact that nobody can be compelled to buy anything unless he wants it.

It is also clear that no reliance can be placed upon a wholesale agreement to restrict drilling. That form of endeavor has failed decisively in the Seminole district. Various executives have worked hard to set up some agreement that would work and the umpire, Ray Collins, who was given rather broad authority to see what he could do.

Collins is a man with considerable oil producing background and he is, furthermore, a man of courage. But he achieved little except, possibly, to demonstrate the futility of the perennial cry, "stop the drill."

The magnitude of the trouble has, of course, been greatly exaggerated. The industry is running a temperature, but it is not a wasting fever as yet. It comes from a boil that requires abrupt surgery. The boil is Seminole. There is some apprehension about west Texas, but that, as yet, is a pimple. It must be remembered that the Mid-Continent always contributes its production in a hurry because the pipe lines are there. That great system has been 20 years in the building.

West Texas lacks the means of getting the oil to the markets and the pipe line construction now under way will be months in the building and will not even then be of the magnitude of the system that takes the Mid-Continent Oil and again, that construction is being done only by the big companies.

A THOROUGHGOING curtailment in the Seminole district, it is believed, would get things on a healthy basis before the end of the summer. Such curtailment will have to be compelled

Coming Meetings

Virginia Independent Oil Men's Association, Hotel Murphy, Richmond, Va., June 13, 14.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 15, 16.

Standardization Conference, American Petroleum Institute, Broadmoor Hotel, Colorado Springs, Colo., June 15, 16, 17.

Michigan Independent Oil Men's Association, Mackinac Island, Mich., June 16, 17.

Committee D-2, A. S. T. M., French Lick, Ind., June 20, 21, 22, 23, 24.

by the companies that hold the power. It will not come through resolutions in a "town meeting." The companies that were represented in the recent meeting called by Walter C. Teagle, in New York, hold the power to check development.

It was not a wilful abuse of power through failure to exercise it, as some critics say, that caused the trouble. To begin with, Seminole failed to fit into its original classification. Operators relied upon their experience with Wilcox sand production, usually characterized by large flush output, speedy decline and rapid intrusion of water. Furthermore, Wilcox pools usually were small in areal extent.

The writer remembers the estimate of one of the most astute of producing executives early last November. He said at that time that he believed the peak of Seminole would be around 160,000 barrels. At that time Bowlegs was unknown. No such bunching of pools within a small area had occurred within his experience—he looked for the usual limiting of production in all directions by dry holes within a period of five or six months and the usual decline of Wilcox sand production.

The effect of air lift in sustaining production, the large territory covered by the pools, were factors that could not be foreseen at that time. Since then they have gone along looking daily for the delimiting of the fields' extent and the appearance of water in large quantity. Now it is realized that within an area of about 900 square miles, only scratched so far as exploration is concerned, there may be many pools of the Seminole type.

The preliminaries, such as fruitless discussion, are pretty well out of the way. The federal government has indicated in plain terms that it can do nothing, a thing that should have been assumed at the outset. It has no basis for action. No authority reposes in the Federal Oil Conservation Board and the Department of Justice, whose primary duty is to prosecute alleged offenders against federal law, is not going to get itself into the position of suggesting avenues through the law down which the oil men may travel to agreement.

Further, it is increasingly plain that the business of running to Washington is an invitation to the government to assert jurisdiction. There are some in Washington who would like to do it. The administration leaders, however, see clearly in the matter. It is the business of the government to see that the rules of the road are observed, not to operate a towing service for someone who breaks down.

Secretary Work, of the interior department, who is chairman of the Federal Oil Conservation Board, said to the writer a week ago, "We are sorry, but all we can do is sympathize."

The industry, economically, is not in as bad shape as it has been in other years. For instance, there was a flat price of one dollar for Mid-Continent crude in 1921 and the price is better than that now. But it will not be if the production continues to climb. The big fellows can check that.

Roxana Opens Gulf Coast Field, Controls Llano Discovery

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, May 20

ROXANA PETROLEUM CORP. completed the discovery well of a unit-controlled salt dome pool this week and paved the way for co-operative development of a new field found in northern Winkler county, near the New Mexico state boundary, by the Llano Oil Co.

The Roxana's discovery well, which made 369 barrels in the first 16 hours at total depth of 5139 feet, gave up the first oil production to come from the Allen dome, in Brazoria county, Gulf coastal Texas. Production was through a quarter-inch choker, indicating considerably larger open flow yields possible.

Earlier tests had been drilled by Roxana on the Allen ranch, where the dome is located, but it remained for a hole drilled in the San Bernard river offside the dome to find the first oil. The well also marked the Roxana's first production in Gulf Coastal Texas.

ROXANA has contracted to purchase a half interest in the well and acreage held by the Llano Oil Co., out of the Scarborough ranch, roughly 13 miles north of the Hendricks development area in Winkler county. The Llano well, which is considered to mark the discovery of another oil field in the Permian salt basin of west Texas, stands about 800 feet of 35 A. P. I. gravity oil in the hole from a pay horizon at 2992-3082 feet.

Although not officially confirmed, it is reported the Roxana's total purchases in the new Winkler county area involve roundly $250,000. The Roxana already had checkerboard acreage in the Llano block before the well showed for production; but it is understood that the present deal involves the pooling of the Llano-Roxana acreage, the splitting of the consolidated interests 50-50 and the Roxana taking operating charge.

The Hendricks ranch field, southwest of Kermit, in the same county, was opened by a similar small well drilled by the Westbrook et al, Fort Worth wildcatters, who sold an interest in their block to Southern Crude Oil Purchasing Co., arm of the Pan American group. Acreage in the four sections surrounding the Hendricks well discovery had, however, been sold off to a total of six or seven operators.

ABOUT the only other outstanding development in Texas producing territory for the week was the extension 3000 feet east of the Yates ranch pool in eastern Pecos county. Mid-Kansas Oil & Gas Co., drilling on Transcontinental acreage, completed 1-C Yates, in the southwest corner of sec. 60, I & G N block 1, making 215 barrels an hour at 1115 feet, total depth, through two 2-inch chokers.

The six Yates ranch wells of Mid-Kansas and Transcontinental are still pinched down from their maximum possible production, but in a 24-hour test, May 18, they made roundly 13,000 barrels.

The Tank Car Gage Rule

J. W. McLarty, chief engineer of the Cities Service Oil Co. of Ohio, is the man who devised the tank car gaging rule that was described in the May 4 issue of National Petroleum News, page 83. Mr. McLarty's name was withheld from the story describing the rule and the method of using it at his request. However, so many inquiries have been received at this office concerning it that we take this way of giving the information.

Mr. McLarty's headquarters is at 1235 Marquette st., Cleveland, O.

Crude Stocks Gain Less; Gasoline Stocks Lose

NEW YORK, May 21.—An increase of about 6,000,000 barrels in stocks of all petroleum products east of California was recorded in April, as compared with an increase of nearly 8,000,000 barrels in March, according to a preliminary report of the American Petroleum Institute.

Pipe line and tank farm gross domestic crude stocks east of California gained 4,111,000 barrels in April, as compared with a gain of 4,962,000 barrels in March.

Stocks of all refined products east of California showed a net increase of 1,790,000 barrels at refineries in April as compared with a net increase of 2,745,000 barrels in March, covering 83 per cent of the country's operating capacity east of California.

Gasoline stocks at refineries east of California decreased 218,000 barrels in April, compared with an increase of 1,843,000 barrels in March. Kerosene stocks gained 290,000 barrels; gas and fuel oil stocks gained 1,728,000 barrels, and lube oil stocks fell off 321,000 barrels. Domestic crude stocks at refineries increased 528,000 barrels.

MALDEN, MO.—Fuel Service Co. recently purchased a new 400-gallon delivery tank, according to C. L. Mitchell, manager.

Seal Beach Field (California) Going Off Rapidly

By William E. Green
N. P. N. Staff Writer

LOS ANGELES, May 21.—CALIFORNIA daily average production during the past three weeks has shown a decline of close to 28,000 barrels, with production during the past week ranging around 630,000 barrels against a high of about 658,000 during the week ending April 30. Shutting in of production and decline at Seal Beach tells a large part of the story. Further declines are expected and it is possible that production will be down another 10,000 barrels by the end of the month.

The story at Seal Beach is much worse than had been expected. On Friday, this field made only 42,000 barrels, with an average over the week of about 46,000 barrels, when it had been expected that the average for the week would slightly exceed 50,000 barrels.

The oil sand in the Alamitos Heights end of the field, the town lot area, is very loose, and those completing wells have been in too great a hurry to get the production, as they knew the sand was thin and would not last very long. As a result, no oil string was used in most of the wells, and in most instances no liners were used. And again, the wells are being flowed through 1½-inch beans, when it seems better practice would have been to use ¾-inch to 1-inch beans. Too great a hurry is proving costly.

As a result of the flash, it appears that not many operators in the field will break even. Conservatively speaking, each well costs at least $50,000 to drill. This does not include cost of the land to start with, neither does it take into consideration royalties paid, storage built, roads built and pipe line work. Unless a deeper sand is found, the story of Seal Beach probably will be a sad one.

The production is being freely bought at 60 cents a barrel, with one instance reported of a pipe line company this week offering 70 cents. The Standard Oil Co. is taking some oil from the townlot area, but at the lower price. It is expected that some of the operators next week will be able to sell their oil at 70 cents, and probably 10 cents higher, as it becomes positively known that the production will be very small in comparison to what had been expected. The crude has a fairly high gasoline content, and if refinable crude was scarce, a premium would be paid.

Long Beach is showing a slight increase in total output, due to completion of a few new wells from the extremely deep sand. On May 1, total of 19 wells were drilling in this old field. Huntington Beach is also holding up better than expected, with a few small wells being completed in the townlot area east of 17th st. In this field, 42 wells were actively drilling May 1. In the Richfield area, 31 wells are actively drilling. A grand total of 503 wells were drilling in the state May 1, an increase of 10 wells over April 1.

Active drilling wildcats in California reached a high point in February, with 142. This does not include the shut down jobs. During March, 135 were drilling. During April, 18 wildcat projects were abandoned, but during the month 12 new rigs went up and at the end of the month 127 strings of tools were actively at work on wildcats. In December, 1925, only 103 wildcats were drilling. This decreased to 99 in January, 1926, with the low point for 1926 being reached in March with only 95 drilling.

There are approximately 500 wildcat ventures in the state at various stages, but most of them are shut down and inactive for various and sundry reasons. Of this total, 127 are active, and many of the others will be abandoned in time.

During the year 1925, total of 141 producing wells in California were abandoned and during 1926, 200 were abandoned. During the first four months of 1927, total of 116 producers were abandoned. During 1925, 948 producers were completed in state, with 913 producers completed in 1926 and 355 completed during first four months of this year.

Schnur Will Direct Activities of Noble Oil & Gas Company

Staff Special

TULSA, May 21

ANNOUNCEMENT has been made of the resignation of W. C. Abrams as vice president and treasurer of the Noble Oil & Gas Co., and the election of W. J. Schnur, sales manager, to the position vacated by Mr. Abrams. Mr. Abrams will re-enter the private practice of law in Tulsa.

The promotion of Mr. Schnur was made at the meeting of directors May 10 at which time officers of the company were elected. The change was effective May 15. Two new directors were elected at the stockholders meeting. They were W. J. Coppinger, production superintendent of the company, and E. Merrell Smith, T. B. Preston of Ionia, Mich. was re-elected president, and J. Holland Moritz, Saginaw, Mich. first vice president. Mr. Coppinger was elected secretary, and R. B. Martin assistant secretary and treasurer.

W. J. SCHNUR

Recently elected vice president and treasurer of Noble Oil & Gas Co.

W. J. COPPINGER

Recently elected secretary of Noble Oil & Gas Co.

S. C. Cameron, who has been in charge of the Dallas office for the company, has been recalled to Tulsa to become salesmanager. E. A. Compton has been promoted to traffic manager, assuming some of the duties formerly handled by Mr. Schnur. W. C. McCallion has been named assistant salesmanager.

Mr. Schnur will have general charge of the company's affairs with headquarters in Tulsa. He has been with the company since 1919, having first been employed as assistant traffic manager.

Shutdown Accomplishes Little In Week But Umpire Is Working Hard

By A. F. Hinton
N. P. N. Staff Writer

TULSA, May 21

AFTER a week of effort, little definite progress has been made toward shutting down drilling wells in the Seminole district. A number of wells have been shut down and more that would have been started have been postponed. How many of either class there are seems impossible to ascertain. Ray M. Collins, umpire in charge of the shut down, does not seem unduly encouraged, and is noncommital when asked to point out certain wells that have been shut down directly as a result of the agreement made by a group of Seminole operators a week ago today.

All of the umpire's efforts have been directed toward shutting down of wildcat wells and those on the outskirts of production. It was realized from the first that it would be a hopeless task to try and bring about a shut down inside any of the four active fields now making 360,000 barrels daily. To prevent or delay the bringing in of other fields to swell the tide of production still further is what Mr. Collins and those favoring the plan are trying to do.

Sifting down all the fragmentary information available, it seems probable that about 40 wells which ordinarily would be drilling as a result of recent discoveries are either shut down or have not started up at all. Information is fragmentary because it is difficult to tell how many of these wells were shut down or delayed as a result of the shut down meeting as compared with those on which work was halted by previous agreements made between operators and lease owners.

THE umpire himself says he does not know just what are the actual results of his week's work, and companies called upon likewise seem to have but little idea as to the facts of the matter. In the meantime, the Seminole district went up to within 3000 barrels of its May 10 peak yesterday, and is only slightly less today.

It is certain that no company or operator wants to open up a new field at present crude prices; this is not necessarily because of the effect the new field might have on the situation, but primarily because there is comparatively little money to be made at present and no sense in making the present bad situation worse. In other words, even from a selfish standpoint operators will go to unusual lengths to delay discoveries of new pools. This feeling has led to the making of a number of agreements under which wells are being delayed in starting as long as the discovery well is produced only at a stated minimum rate of flow. It has resulted also in successful negotiations with farmers or fee owners looking toward extension of time which to complete a well and also in getting them to accept royalty payments in lieu of drilling, where the lease is offset by production.

ONE such instance is that in the vicinity of the Prairie's wildcat well in 24-9-5, about mid-way between Seminole and Earlsboro. It will be remembered that the Prairie completed this well some time ago after having kept it shut down on top of the sand. The well was drilled into water and had only about two feet of oil pay, but after being plugged back it was put on production and has been making about 345 barrels a day. To date, no other wells are drilling around it.

Adjoining operators have agreed not to start any wells as long as the Prairie produces no more oil than it is now taking from the well. It is said that the companies owning the offset leases are paying royalty to their fee owners instead of drilling wells. These owners receive the same royalty as that being paid by the Prairie to the fee owner of its lease.

Another "hot spot" is that in the vicinity of 32 and 33-8-6, three miles south of Bowlegs production. Here the Gypsy Oil Co. some time ago drilled in a rank wildcat well that is good for at least 1200 barrels a day. Under ordinary circumstances, it is certain that a large number of wells would now be drilling in all directions from this discovery, and the discovery itself would be making as much oil as the operators could get out of it.

ACTUALLY, however, the well is pinched down to 100 barrels a day, and no wells have started up in the vicinity; all the adjoining lease owners have agreed to start no wells as long as the well makes no more than its present output.

Southwest of this well, the Gypsy has another wildcat in 5-7-6 which gives indications of making a well if drilled in, and makes the area look like another typical Seminole pool in the making. This well, however, has been shut down, and will not be drilled in under present conditions. No wells have started up around it. Another instance where the company has succeeded in getting the landowner to agree—for a financial consideration—to an extension of time.

It seems that the vast majority of leases in the Seminole district are at the point where they will expire in the next few months unless a well has been completed. Where it is impossible to get the fee owner to agree to an extension of time, a well has to be drilled or the company loses the lease by default.

A week is much too short a period to hope to accomplish a great deal in so complicated a task as bringing about a real shut down over the large area outlined by Mr. Collins as his realm. As pointed out last week, the 15-day period named in the shut down agreement would allow him only to get fairly started on the job.

However, he has assembled a mass of data as to drilling wells, locations, depths, lease conditions, drainage, and the like, and will take it all with him to New York to attend the meeting called for May 25. There he will say definitely what progress has been made and will give his plans for a continuation of the shut down movement, if those at the meeting decide to keep the agreement in force.

California Stocks Gain 266,170 Bbls. in April

Staff Special

LOS ANGELES, May 21.—Total stocks, all petroleum products, in California increased 266,170 barrels during April, according to American Petroleum Institute report, prepared by the San Francisco office. Stocks of heavy crude, including fuel, increased 651,127 barrels, while stocks of gasoline content crude were decreased 82,582 barrels. Gasoline stocks increased 43,942 barrels while naphtha distillates storage decreased 249,633 barrels. All other stocks decreased 96,684 barrels.

At end of April, 503 wells were drilling in the state, with 128 new rigs erected during the month. Total of 105 wells were completed with a total initial production of 81,432 barrels. At end of April, 11,323 wells were producing in the state.

Daily production during April was 648,870 barrels against 639,862 barrels during March.

Watkins New Sales Manager

SHREVEPORT, May 19.—J. C. Watkins, traffic manager of the Shreveport Producing & Refining Corp. since the company was organized, has resigned effective June 10 to accept the position as sales manager for Root Refineries, Inc. with offices in this city. Mr. Watkins succeeds J. L. Geraghty who resigned to enter the marketing business here.

Percentage Ownerships of Oil Fields Dependent on State Legislation

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, May 20.

PERCENTAGE ownerships of drilling blocks, proposed to the Federal Oil Conservation Board as affording at least a partial remedy for overproduction of petroleum in the future, would operate as a voluntary relief measure to be inaugurated within the industry itself.

The extent to which the proposed plan may function is largely dependent on state legislation such as that proposed by Judge H. E. Bell, chief supervisor of the Oil and Gas Division of the Railroad Commission of Texas, which administers the state conservation laws.

Aside from showing sympathetic attitude through the statement of Secretary Work that the federal government "is ready to assist in every proper manner" the position at Washington could not have been materially different from that taken; but advices from Washington indicate federal government officials believe that the states of Oklahoma, through the Corporation Commission, and Texas, through the present special session of the legislature, may apply their police powers under conditions that would be legal.

JUDGE BELL'S redraft of Texas conservation laws for introduction in the Texas legislature includes a section permitting voluntary pooling agreements that will promote conservation of natural resources, will tend to prevent their waste, or may be found in the interest of public welfare.

This section of the proposed new conservation law in Texas would provide means of joint exploration, development or operation of the properties concerned after approval of the Railroad Commission, which would enter of record an appropriate order; the carrying out of which would be, thereby, made lawful.

Although sponsored by Judge Bell of the Oil and Gas Division, and described by representatives of the petroleum industry in conference at Austin as a "constructive step," the Texas bill can be introduced in the present extraordinary session of the legislature only by Governor Dan M. Moody. This is because of the fact that the present assembly is an extra session. Governor Moody has made no public utterance indicating his disposition, but the bill is now in shape for its introduction.

The Texas bill, as previously pointed out, contemplates any means of joint exploration, development or operation of properties which might be approved; but the article would specifically apply to the percentage plan referred to by leaders in the oil industry, Messrs. Teagle of the Standard Oil Co. of New Jersey and Farish of the Humble Oil & Refining Co.

Fractional ownerships, or percentage developments, would involve no intricate methods of procedure. They would amount merely to the extension of partnerships into groups of companies or individuals instead of being limited to say two companies.

An effect on operations, as first publicly suggested on page 50 of the May 4, 1927 issue of National Petroleum News, would be to avoid duplication of field effort and to cut down capital investment in costs of lease bonuses. Besides oil that could not be readily absorbed by the market could be held back as a conservation measure.

Under present wildcatting practice it is inevitable that the oil shall come onto the market immediately following the drilling of a discovery well. There is no question of the industry's need for the wildcatter, but often the best interests of both the industry and the public would be served by keeping the oil in the ground until needed. Nor is the industry or public served by the wildcatter profiting from speculative land values that follow, or even precede, a discovery in a field where the demands of the industry would call for deferred operations to accomplish the greatest general good.

"A" blocks a tract, or tracts, which may be large or small, as governed by individual conditions. He proposes drilling a test well, either because he suspects the presence of oil in and under the surface or because he can make money anyhow by selling "protection" acreage. "A" may be either an individual or a company, and similarly he may be experienced or inexperienced in producing oil.

UNDER present practice, the wildcatter, "A" sells full working interests in leaseholds inside his block to other companies or individuals at bonus prices that will generally yield him a cash return sufficient to pay for the original block and drill his test.

Large companies have generally been the worst offenders as regards purchases of "protection" leaseholds, paying relatively high prices for acreage closest to test well locations; though the "blockers," or wildcatters, generally are less stable operators.

In event of a discovery, a rush of drilling follows. All who have bought leases in the original block put forth their efforts to get wells down first and produce the greatest possible quantity of flush oil. Thus, defensive operations grow and line drilling often reaches a pernicious stage. The result is that the entire field is drilled more rapidly than economic conditions require; also that the operator, who is seldom in position to store his production, throws it onto a market that in recent years has not been such as to absorb it without demoralization.

It is only necessary to spread before you a map of any competitively drilled oil field in the country to visualize the result. If the field has been developed there will be found along each of the boundaries of any given lease regularly spaced wells where competing operators have gone from one end of the line to the other.

Were the ownership of fractional interests, or percentages, to prevail in any considerable number of fields this would be obviated. The drilling block, which ordinarily could be assembled to embrace an entire field, would be tested through the operating medium of a committee representing the several interests involved. There might be five, eight, ten, or any other number of companies or individuals participating in the pooling arrangements.

EACH participant might reserve to himself or company the right to claim his pro rata of the oil produced on the community property, no single purchasing agency having any control of crude which other interests saw fit to dispose of elsewhere.

It would be possible under the fractional ownership system to space wells according to maximum engineering efficiency, as shown by structural and other data brought to light in development of the field. In areas where the formations and structural conditions were such as to permit recovery through the medium of one well to 50 acres the field would be drilled accordingly; or, if engineering data showed fewer or larger numbers of wells necessary to recover the oil, the unit of development would be fixed at one well to 40 acres or one well to 80 acres, etc.

Wells put down under conditions mentioned would not need to be drilled against property lines, but could be located in the center of each 40 acre or 80 acre unit. Fee land and royalty owners would be protected against drainage under such practice and it would be possible in the early stage of development to drill a well for each of them while feeling out the size and character of the underground structure.

If as development proceeded, the owners of the property found it desirable to drill the field on a basis of a well to five acres, or 10 acres, the drilling program would be simply carried forward in line with economic needs and field efficiency that would be guided by engineering knowledge.

THE plan contemplates making the fee land or royalty owner party to the agreement, if possible; but regardless of his participation in the actual pooling arrangement his lease contract usually carries with it only the obligation of "reasonable development" after the drilling of a first well.

Overproduction Ghost Should Not Scare Refiners Out of a Fair Profit

By Warren C. Platt, Editor

THE marketing of petroleum products, not only from the refinery, but from the bulk station by the jobber, is being seriously handicapped by the present loose talk of a "nation-wide over-production" and of great perils to come, which is unjustified by the facts.

All this talk causes everyone to figure on steadily declining markets. The marketer, from his bulk station plant in making contracts with dealers and with consumers, is moved by such talk to believe that he is warranted in making arrangements for future sales at lower prices. He is, in effect, being invited to speculate upon a declining market.

The refinery sales department is being urged to the same policy. Everywhere the refinery sales department turns, it hears of impending calamity. If it walks into the office of its chief, who, nine times out of 10 is a producing man, it hears a most heart-rending tale of how sick the oil industry is. But the chief doesn't take the time to figure out for himself, let alone explain to the sales department, that he is thinking only of production in which he was probably born and raised. He does not stop to say that because he may be losing money on some oil production that is no reason that the refinery should lose money, or the marketing business lose money. But he cries over the sales department and sends that department back to its task disheartened.

Then when that sales department gets in contact with the jobbers—the buyers—it has the same report echoed back to it, which the marketing end obtains from the exaggerated newspaper reports which have gained currency. If the market didn't slip and keep on slipping, it would be one of the greatest miracles of all times.

The atmosphere in Tulsa is certainly not conducive at the present time to the proper selling of refinery products. Everywhere you go there is weeping and wailing and gnashing of teeth.

After being thoroughly inoculated with the Tulsa spirit at the present moment, it will be a most super-human sales manager indeed, who would not turn around and be tickled to death to take half the present price for his products. And any jobber who went into Tulsa for a few days and saw the puddles of tears around in all the offices, and saw the clouds of gloom that are settling down upon the 10 and 20 and even 30 story buildings, would promptly return home and rush wildly to all his customers and offer to make contracts at half the present current tank wagon price for the next year or two years.

This may seem like over-painting the picture, but to those of us who have been going in and out of Tulsa this year, who have been going from sunshine into darkness, then back to sunshine again, it does not seem overdrawn at all. The writer has seen the same thing many times before. It is about time that the industry stopped its nonsensical way of thinking.

This particular present over-production is less dangerous by far than any that the oil industry has ever had, because it is located in one field—Seminole—and is controlled by a very few companies, all big, who at the present moment are storing the oil. If you go out and try and buy some crude you will be surprised how little "over-production" there is.

Previous periods of over-production which have beared the market, have been caused by a pool or several pools where the oil was produced by a large number of individual operators, many of them new to the industry. The last California excitement was of that sort. The same was true of Burkburnett and Ranger, Texas. The same was true of Cushing, Oklahoma, and before that the Glenn pool, and before that Spindletop and Beaumont. In all of those previous excitements there were scores of operators who had oil to sell and who had to sell it in order to eat.

Consequently they bid against each other to get a low enough price which would find a buyer. The result was many Independent refineries sprung up. They over-built the refining market and in bidding against each other, they over-built, for the time being, the distributing market.

But today this surplus crude is tightly held. It is only in one district. While there will be production from west Texas of probably enormous size, that will not come on for maybe a year or two, maybe longer—and even then it won't come until the big companies who control it, want it.

At the present time, there is frankly no reason in the world why the surplus of crude should have one iota of effect upon the tank car market nor one iota of effect upon the jobber's market or his plan in selling to the dealers and consumers beyond the actual change in cost of raw material. The refinery sales departments and the marketing departments and companies should go on their way just as if there was only a normal supply of crude. A refiner should get a fair margin to include a fair profit, and the marketer too.

It would be a fine thing for the oil industry right now if all refinery sales departments could be shipped from the gloom of the producing districts up to the sunshine of the real business districts and be allowed to conduct their business from the sunshine.

And it would be a still finer thing, if every oil man would stop and study the situation and guard his thinking and his statements and see that his thoughts conform exactly to the facts. There is no occasion for a stampede or a panic. There is no occasion for a surplus production unless the big companies want it and if they want it, let them produce it and let them store it and say nothing about it.

Shut Down Movement Only Talk Say Okmulgee Operators

OKMULGEE, OKLA., May 21 BELIEVING that no sincere effort has yet been made toward the curtailment of oil production or of new development in the greater Seminole area and that discussion of a shut down of production or drilling operation in this area, when no such action is contemplated, will injure rather than aid the petroleum industry, the Okmulgee District Oil & Gas association has forwarded to the Federal Oil Conservation Board at Washington a resolution calling attention of the board to the situation as viewed by the Okmulgee producers.

The resolution calls upon the federal board to investigate the causes of the present crisis in the oil business and to give the public a statement as to what interests are to blame for the present alleged over production.

The resolution also sets out that reductions of more than 50 per cent in the prices of crude oil in the past six months have not been followed by similar reductions in the prices of refined products. It is further pointed out that 28 companies operating in the Seminole field have completed more than 400 producing wells and produced more than 50,000,000 barrels of crude oil up to May 14, 1927 and that on that date 467 additional wells were being drilled in the Seminole field.

The opinion is expressed in the resolution that any movement to correct present situations in the industry must be initiated by the leaders of the industry itself and not by government agencies. The co-operation of the Okmulgee association is pledged to any practical measures that the oil industry may take for the conservation of petroleum.

The resolution was unanimously passed at a meeting of the Okmulgee Association May 14 and was drawn up by a committee made up of U. S. Senator W. B. Pine, Major John H. Thatcher, M. C. French, and C. I. O'Neill, secretary of the association. At the request of the Federal Trade Commission a copy of the resolution was also sent to the office of the trade commission at Washington.

National Oil Scouts Hold Fourth Annual Meeting at Dallas

Staff Telegram

DALLAS, May 24. — National Oil Scouts of America, which emerged as a "pup" organization in 1924 at Mineral Wells made clear at the fourth annual meeting beginning yesterday in Dallas that "It's a big dog now." The largest attendance in history was marked by the most businesslike sessions since organization. All meetings were attended by visiting "eyes of the industry" from Texas and Louisiana districts especially and some parts of Oklahoma.

Mayor R. R. Burt of Dallas, himself an oil man, welcomed the scouts, after which they were addressed by J. Edgar Pew, vice-president and general manager of Sun Oil Co., who is also a former president of the American Petroleum Institute. Mr. Pew's remarks were largely constructive along lines pertaining to oil company scouting but he did take occasion to say that state legislation looking forward conservation of gas in oil production practice would, in his opinion, solve some of the present ills of the industry of preventing recurrence of "peaks of over-production"; this also serving to bring about greater ultimate recoveries of oil from individual fields. Director Carl A. Young of the standardization division of the American Petroleum Institute discussed field practice in relation to his work.

The rest of the first day's meeting Monday was given over to papers presented by the scouts themselves and dealing with field conditions in their working territories in Texas and Louisiana. E. J. Raisch of the Republic Production Co., discussed use of geophysical instruments. Paul Madden of the Republic Production Co., gave a paper of the Boggy Creek Salt Dome of interior east Texas. West Texas development was discussed in a joint paper by Earl Whitcomb of the California Co., G. C. Phillips of Marland Oil Co. of Texas, J. H. Langston of Sun Oil Co. of Dallas and Art Galbraith of Marland Oil Co., of Texas, at Fort Worth.

Ford Turner of Pure Oil Co. at San Antonio, discussed southwest Texas. G. R. Nicholson of Empire Gas & Fuel Co., gave a short history of Panhandle development. John Biscoe of Vacuum Oil Co. at Eastland discussed shallow sand development in the Texas sand area west of Ranger. C. E. Morris of Gulf Refining Co., of Louisiana at Shreveport, discussed the Caddo, Louisiana, field and W. N. O'Roark of Standard Oil Co. of Louisiana gave a resume of recent operations in the broadly termed Shreveport district.

Scouts presenting papers were complimented by a number of executives attending the meetings for the serious work spent in preparing them, saying they had paved the way for even more helpful meetings in the future. The sessions were especially marked by the serious attitude of those attending in contrast with earlier meetings at which entertainment features had been stressed.

The scouts elected W. N. O'Roark, Standard Oil Co. of Louisiana at Shreveport, president; Jack Pew, Sun Oil Co., Dallas, first vice-president; Ed Dilley, Atlantic Oil Producing Co., San Angelo, second vice-president; John H. Langston, Sun Oil Co., Dallas, secretary-treasurer; and Ford Turner, Pure Oil Co., San Antonio, chairman of executive committee.

Phillips Buys Control of Oklahoma Natural

Staff Telegram

BARTLESVILLE, Okla., May 23. — Phillips Petroleum Co., of this city announced today that it had purchased major portion of outstanding stock of Oklahoma Natural Gas Corp. There will be no change in management except that Phillips is chairman. R. C. Sharp will continue as president and general manager and L. C. Ritts as vice president and treasurer.

Headquarters will be maintained in Tulsa as in the past. All department heads are to be retained. Oklahoma Natural, the pioneer gas company in Oklahoma, has 1900 miles of pipe lines and supplies gas to more than 50 principal towns in central and south Oklahoma, including Oklahoma City, Tulsa, Muskogee, Okmulgee and Shawnee, and to principal industries in its territory.

Its present gas supply is adequate, the announcement says, and there will be no change in policy as to new connections or as to taking gas from present connections. Phillips announces intention of connecting present gas system with Amarillo gas field by construction of a 22-inch pipe line about 200 miles long, which will insure Oklahoma a permanent and more stable supply for the future.

Details as to construction of this line are not yet available. It is probably that towns along its route will be supplied with gas. Phillips already is one of largest producers and suppliers of natural gas in the United States. With large reserves in Oklahoma, Amarillo and north Texas fields, and through this affiliation it is going into retail gas business in large way. Information as to consideration involved is not available.

CLEVELAND, May 24.—The news edition of Industrial and Engineering Chemistry carries an announcement that Paul H. Stark has resigned as chemist for the National Refining Co. at its Coffeyville, Kan., refinery, to take the position of chief chemist with the Crown Central Petroleum Co., Houston, Tex.

Problems of Natural Gasoline Industry Being Studied at Annual Convention

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, May 24—CAREFUL study of the economic and operating problems of the natural gasoline industry is being undertaken by the Association of Natural Gasoline Manufacturers in its sixth annual convention which opened at the Mayo hotel here this morning. With a full program of addresses on important subjects and allowance of time for open discussion the convention this year will occupy three full days.

Constructive suggestions for bettering the present condition of the industry were made by E. L. Peck, manager of the Empire Gasoline Co., Bartlesville, in his annual address as president of the association at the first meeting. Continuation of the present campaign of education and research to broaden the market for natural gasoline, construction of more adequate storage for use in avoiding glutted markets from time to time, improvement of the quality of the product manufactured and a more careful preliminary study of new gasoline plant projects by manufacturers to ascertain whether a profit will be possible before rushing into new fields, were recommended by Mr. Peck as being avenues through which the industry may be returned to a more stable basis.

F. L. CHASE, vice president of the Lone Star Gas Co., Dallas, was the first speaker on the convention program. It was his task to welcome members of the association and visitors to the meeting.

Following the address by President Peck, the secretary and treasurer's annual report was presented by A. V. Bourque. As in past years Mr. Bourque reported the finances and membership rolls of the organization to be in excellent shape.

George P. Bunn, vice chairman of the gas testing committee, reported on the activities of that group during the past year, including the recent experiments undertaken to determine the best method of determining the specific gravity of natural gas. The commitee has been working on this problem through controlled field tests for several months in much the same manner that it attacked the problem of testing the gasoline content of natural gas more than a year ago.

MR. BUNN reported that the testing code adopted by the association a year ago has been accepted by the Natural Gas Association of America and is now the joint code of the two associations.

Emby Kaye, general superintendent of the gasoline department, Skelly Oil Co., presented an informal report of the committee which had been appointed to study outage losses sustained by gasoline manufacturers in shipments to refiner customers.

He suggested that individual companies and the association as a whole undertake a campaign of education among refiners to demonstrate the proper methods to follow in unloading tank cars.

Mr. Kaye stated that two companies producing between 25,000,000 and 30,000,000 gallons of gasoline per year recently compared notes and discovered that their outages approximated 6,000,000 gallons each last year with a resulting loss of about $70,000 per company. It was suggested that much of this loss comes from improper unloading at refineries.

Other speakers in the same subject in the open discussion pointed out that losses increase where refiners hold incoming cars from two to 10 days before unloading. It was suggested that manufacturers might adopt a rule that no outages will be paid after cars have been held on unloading racks more than two days.

Following the morning session the associate members of the association consisting largely of equipment manufacturers tendered the convention delegates a Dutch lunch on the 16th floor of the hotel. A second lunch was to be given on the last day of the convention and a stag smoker with an elaborate vaudeville program was given on the evening of the first day.

Following are the companies aiding in the entertainment and luncheon program: Acme Tank Car Co., Coffeyville, Kan.; American Car & Foundry Co., St. Louis; Atlas Supply Co., Muskogee, Okla.; Bessemer Gas Engine Co., Grove City, Pa.; Bruce-MacBeth Engine Co., Cleveland; Chaplin-Fulton Manufacturing Co., Pittsburgh; Continental Tank Car Co., Tulsa; C. & G. Cooper Co., Mt. Vernon, Ohio; G. M. Davis Regulator Co., Milwaukee; Fisher Governor Co., Marshalltown, Ia., and the Smith Separator Co., Tulsa; Foxboro Co., Cincinnati; Gas Engineering & Construction Co., Tulsa; General American Tank Car Co., Chicago; Hope Engineering & Supply Co., Mt. Vernon, Ohio; Magnetic Ignition Co., Tulsa; Metric Metal Works, Erie, Pa.; National Petroleum News, Cleveland; Neilan, Schumacher & Co., Los Angeles; North American Car Co., Chicago; *The Oil & Gas Journal*, Tulsa; Pennsylvania Tank Line, Sharon, Pa.; Refiner & Natural Gasoline Manufacturer, Houston; Refinery Supply Co., Tulsa; C. J. Tagliabue Manufacturing Co., Brooklyn; Tulsa Boiler & Machinery Co., Tulsa; Union Draft Gear Co., Chicago; Wescott & Greis, Inc., Tulsa; Worthington Machinery Corp. of Okla.; and the Taubman Supply Co., Tulsa.

At the afternoon session today Mr. Chase acted as chairman. The first speaker was J. C. Chatfield of National Petroleum News who presented a paper on "Economics of the Natural Gasoline Industry."

Secretary Bourque presented a report of the research and educational campaign in the absence of D. E. Buchanan, vice president of the Chestnut & Smith Corp., who was unable to be present.

The afternoon program was concluded with a paper by Paul D. Barton of Alhambra, Cal., president of the California Natural Gasoline Association. Mr. Barton spoke on "The Natural Gasoline Industry in California."

Sinclair Sentenced and Fined for Contempt

WASHINGTON, May 23.—Harry F. Sinclair, head of the Sinclair oil interests, has been fined $500 and sentenced to three months imprisonment in the District of Columbia jail for contempt of the U. S. Senate in refusing, in 1924, to answer certain questions about the Teapot Dome lease at a senate inquiry. He refused to answer 10 questions, six of which the judge ruled should have been answered.

Sinclair noted an appeal and was released on $5,000 bail. Martin W. Littleton, his lawyer, pointed out to the court that Sinclair refused to answer the questions on Littleton's advice that the law put no compulsion on him to answer and that it took the Supreme Court of the United States more than two years to come to a conclusion that the law compelled him to answer, Littleton argued that the offense was a technicality and a mere irregularity under an uncertain statute.

Correction

Prices in the refinery table on page 125 of this week's issue on Pennsylvania wax are incorrect. Prices of both Pennsylvania grades should be 2.60 to 2.75 cents per pound, instead of 3 cents on 122-124 and 3 to 3.25 cents on 124-126 wax.

Bowlegs Making 116,000 Barrels Daily As Seminole Nears Former Peak

By A. F. Hinton
N. P. N. Staff Writer

TULSA, May 21

ALTHOUGH falling short by about 3000 barrels of its peak of May 10, the Seminole district jumped its output steadily the past week until yesterday, when it got up to 360,108 barrels from 436 wells. Today its production was only slightly less, 359,997 barrels.

Earlsboro and Bowlegs were the only fields in the state to show substantial gains in production, and their increases were offset by declines in most other fields. The net result was an increase of 2270 barrels in Oklahoma production, which averaged 736,450 barrels a day over the week, according to National Petroleum News estimate.

This is slightly above 8000 barrels less than the state's all-time record figure of 744,880 barrels, attained during the week ending May 7, but it is altogether probable that that figure will be exceeded in the next few weeks. It is interesting to note that Oklahoma's crude production has been steadily more than 700,000 barrels a day since Feb. 12, its lowest mark in that period having been 701,040 barrels during the week ended March 4.

THERE were several noteworthy features in the course of Seminole production the past week. One of these was the rise of Bowlegs to about 117,000 barrels daily at the close of the week, as compared with 99,000 barrels a week ago. It was stated in these columns three weeks ago that this field probably would be making 100,000 barrels daily by May 15, and on that date it attained that figure for the first time. It is generally believed among engineers and other observers of production matters that the peak of Bowlegs will be somewhere around 175,000 barrels.

It is also noteworthy that the steep decline of the old Seminole field apparently has been halted, and indications are that it will go off much more slowly from now on. Since March 11, this field dropped from 233,000 barrels to its present output of 144,000, a decline of 89,000 barrels in 10 weeks. From April 22 to May 13, it declined at the rate of 15,000 barrels a week, going from 194,700 to 150,740 barrels. In the week just closed, however, it declined only 5900 barrels, and a number of properties which had been dropping rapidly held their production practically even. In the case of the Sinclair properties in 35-9-6, which have been among the fastest-declining leases in the field, production actually recorded a small gain in the past week.

Inasmuch as only five wells were added to the field's total during the week, making 275 in all, it seems reasonable to assume that these wells had little to do with the course of Seminole's output, and that it has reached the "flattening-out" point on its decline curve. Therefore, it is likely that ensuing weeks, while they will see the field continuing to decline, will show a much smaller relative decrease than has been the case for the past two months.

This means that the continued increase of Bowlegs and Earlsboro will be less offset by decreases at Seminole and will therefore tend to be reflected more directly in the district total. If we decline Seminole proper 5000 barrels a week from now on, assume that Bowlegs will be making 175,000 barrels and Earlsboro 75,000 barrels, a month hence, the net result would place the district total at 408,000 barrels a day before July 1.

In order to jump its production from 99,000 to 116,000 barrels in the past week, Bowlegs added nine new wells, bringing its total to 63, and giving it a per-well average of 1840 barrels. History of this field is similar to the earlier days of Seminole, in that wells making as much as 3000 barrels one day will have gone dead the next, only to be put on air and come back to their former production in a few days. This causes considerable fluctuation in production by properties, but has little effect on output of the field as a whole as long as so many new wells are being drilled in.

EARLSBORO, which now has 60 wells as compared with 52 last week, is now higher than at any previous time in its history, making 66,340 barrels today and 65,646 barrels yesterday. Out of the 60 wells, 31, or more than half, are in the shallow sand and are producing 4300 barrels, so that the remaining 29 Wilcox sand wells are producing 62,040 barrels daily, or about 2140 barrels per well per day. Gypsy Oil Co. is the largest producer in this field, with 10 wells making 16,286 barrels daily.

The Texas Co. joined the ranks of Bowlegs producers during the week when it drilled in its No. 2 Reed, in the SWc NE of 14-8-6. At 4255 feet, it is 17 feet in the Wilcox sand, and flowed 1835 barrels. After having been shot with 15 quarts, it started off at the rate of 120 barrels an hour. Indian Territory Illuminating Oil Co. No. 3 Livingston, in the NWc SE NW of 15-8-6, a quarter-mile northwest of the same company's discovery well on this farm, made 2780 barrels at total depth of 4150 feet in the Wilcox.

The Bowlegs field has been apparently cut off to the west by a dry hole in the

(Continued on page 31)

Drilling Operations in Oklahoma, Kansas and Texas

	May 21 Loc.	Rigs	Drg.	S.D.	Week Ended Total	May 14 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	..	9	22	7	38	1	4	25	6	36
Other Osage	11	5	31	7	54	11	6	30	7	54
Bristow-Cushing	3	7	71	13	94	6	8	77	66	97
North Oklahoma	3	8	84	33	128	3	9	84	35	131
South Oklahoma	13	18	168	42	241	14	18	171	40	243
Muskogee	..	6	25	17	48	...	5	26	19	50
Okmulgee-Bristow	5	50	77	25	157	6	48	82	26	162
Tonkawa	..	...	3	1	4	...	...	3	1	4
Seminole Dist	46	59	534	37	676	52	82	491	42	667
Total Oklahoma	81	162	1015	182	1440	93	180	989	182	1444
KANSAS	36	49	143	88	316	37	51	166	82	336
TEXAS										
Central	..	107	280	201	588	...	116	246	197	559
East Panhandle	..	98	226	98	422	...	90	259	100	449
N. Central	..	58	107	28	193	...	57	108	22	187
West	..	109	129	64	302	...	102	112	85	299
Laredo	..	2	37	13	52	...	4	37	16	57
Total Texas	..	374	779	404	1557	...	371	772	432	1575
GRAND TOTAL	117	585	1937	674	3313	130	602	1927	696	3355

Summary of Seminole District Production by Companies having more than 10,000 barrels daily production

Company	Bowlegs Wells	Bowlegs Prod.	Earlsboro Wells	Earlsboro Prod.	Searight Wells	Searight Prod.	Seminole Wells	Seminole Prod.	Total Wells	Total Prod.
Amerada	7	15,755	4	12,987	0	0	12	5,327	23	34,069
Barnsdall	0	0	2	6,724	0	0	11	8,480	13	15,204
Carter	7	16,545	0	0	12	12,740	47	41,999	66	71,284
Gypsy	5	8,096	10	16,286	1	860	24	7,817	40	33,059
I. T. I. O.	16	34,566	0	0	0	0	26	8,063	42	42,629
Magnolia	0	0	3	10,992	0	0	2	1,720	5	12,712
Mid-Cont	1	1,969	2	5,075	6	7,800	16	2,712	25	17,556
Prairie	3	5,850	1	345	10	6,775	13	3,980	27	16,950
Pure	7	9,627	0	0	1	825	18	7,817	26	18,269
Sinclair	7	12,850	1	0	1	1,100	16	6,235	25	20,185
Tidal	0	0	0	0	0	0	26	10,685	26	10,685
Turman	0	0	0	0	0	0	9	10,752	9	10,752

Seminole District Production By Companies and Leases, May 20 and May 13, 1927

Company	Farm	S.T.R.	May 20 No. Wells	May 20 Prod.	May 13 No. Wells	May 13 Prod.
BOWLEGS						
Amerada	Rascoe	15– 8–6	7	15,755	7	12,540
Atlantic	Jones	16– 8–6	2	1,380	2	125
Atlantic	Taylor	10– 8–6	1	2,625	1	780
Total Atlantic			3	4,005	3	905
Carter	Bowlegs	15– 8–6	1	3,245	1	0
Carter	Walker	15– 8–6	1	50	1	1,940
Carter	Wise	23– 8–6	1	12,850	3	6,605
Carter	Harjoche	14– 8–6	2	400	1	265
Total Carter			7	16,545	5	8,810
Empire	Lacey	14– 8–6	3	4,446	2	2,698
Gypsy	Walker	15– 8–6	4	7,994	4	4,877
Gypsy	Brown	33– 8–6	1	102	1	245
Total Gypsy			5	8,096	5	5,122
I. T. I. O.	Davis	13– 8–6	2	5,014	2	4,858
I. T. I. O.	Goforth	15– 8–6	3	8,161	3	9,172
I. T. I. O.	Livingston	15– 8–5	5	7,823	3	4,304
I. T. I. O.	Walker	15– 8–6	4	8,715	4	7,720
I. T. I. O.	Youngblood	24– 8–6	2	4,853	2	4,670
Total I. T. I. O.			16	34,566	14	30,724
Mid-Cont	Baker	10– 8–6	1	1,969	1	3,110
Prairie	Gahagan	23– 8–6	1	3,200	1	2,800
Prairie	Harber	10– 8–6	2	2,650	1	5,137
Total Prairie			3	5,850	2	7,937
Pure	Reed	14– 8–6	7	9,627	4	12,160
Roxana	Taylor	16– 8–6	2	397	1	0
Sinclair	Adams	22– 8–6	1	50	1	90
Sinclair	Bowlegs	22– 8–6	1	25	1	475
Sinclair	Harjo	14– 8–6	3	6,385	3	10,085
Sinclair	Walker	22– 8–6	1	2,820	1	700
Sinclair	Jones	9– 8–6	1	3,570	1	3,765
Total Sinclair			7	12,850	7	15,115
Texas	Reed		1	1,835	1	60
TOTAL BOWLEGS			63	115,936	54	99,181
EARLSBORO						
Amerada	Anderson	15– 9–5	3	6,748	3	6,941
Amerada	Cowden	4– 9–5	1	6,239	1	6,601
Total Amerada			4	12,987	4	13,542
Barnsdall	Savolka	15– 9–5	1	4,942	1	4,728
Barnsdall	Smith	15– 9–5	1	1,782	1	2,541
Total Barnsdall			2	6,724	2	7,369
Crosbie	Bryant	9– 9–5	1	4,075	1	5,635
Gypsy	Bora	16– 9–5	1	0	1	0
Gypsy	Earl	16– 9–5	1	0	1	0
Gypsy	McFarland	9– 9–5	2	2,220	2	2,825
Gypsy	Peter	10– 9–5	2	5,992	1	3,850
Gypsy	State	16– 9–6	4	8,074	4	8,240
Total Gypsy			10	16,286	9	14,915
Independent	Knappen	8– 9–5	1	2,620	1	3,073
Magnolia	Sparks	11– 9–5	1	500	0	0
Magnolia	Holmsley	11– 9–5	1	6,903	1	7,105
Magnolia	Bryant	9– 9–5	1	3,589	0	0
Total Magnolia			3	10,992	1	7,105
Mid-Cont	McCumber	9– 9–5	2	5,075	1	700
Phillips	Graham	9– 9–5	2	1,532	1	328
Philmack	Dobbs	8– 9–5	1	710	1	2,057
Prairie	Baker	24– 9–5	1	345	1	395
Sinclair	Foreman	18– 9–5	1	0	1	0
Shallow Sand			31	4,300	29	4,500
TOTAL EARLSBORO			60	65,646	52	59,519
SEARIGHT						
Carter	Davis	4– 9–6	5	8,760	5	9,345
Carter	Frazier	3– 9–6	4	3,885	4	3,655
Carter	Kiker	2– 9–6	1	0	1	65
Carter	Scott	26–10–6	1	50	1	50
Carter	Stewart	34– 9–6	1	55	1	0
Total Carter			12	12,740	12	13,115
Gypsy	Cudjo	4– 9–6	1	860	1	928
Mid-Cont	Grayson	34–10–6	5	7,745	5	8,295
Mid-Cont	Soloche	33–10–6	1	55	1	50
Total Mid-Cont			6	7,800	6	8,345
Prairie	Cannon	33–10–6	1	35	1	0
Prairie	Carter	10– 9–6	1	25	1	25
Prairie	Houck	30–10–6	1	15	1	15
Prairie	Kinkade	33–10–6	7	6,700	7	6,980
Total Prairie			10	6,775	10	7,020
Pure	Aldridge	3– 9–6	1	825	1	829
Roxana	Strothers	3– 9–6	1	397	1	422
Searight	Youngblood	33–10–6	2	0	2	0
Sinclair	Polly	3– 9–6	1	1,100	1	1,155
Twin State	Cudjo	4– 9–6	1	1,244	1	1,352
Wilcox	Chupco	4– 9–6	2	1,900	1	1,627
TOTAL SEARIGHT			38	33,631	37	34,794
SEMINOLE PROPER						
Amerada	Fixico	23– 9–6	4	2,530	4	2,997
Amerada	Rentie	23– 9–6	4	1,720	4	1,939
Amerada	Killingsworth	23– 9–6	4	1,077	4	1,077
Total Amerada			12	5,327	12	6,003
Atlantic	N. Cudjo	26– 9–6	4	760	4	964
Atlantic	J. Cudjo	36– 9–6	2	0	2	35
Total Atlantic			6	760	6	999
Barnsdall	Carter	24– 9–6	9	5,045	9	5,213
Barnsdall	Jones	34– 9–6	2	3,435	2	3,470
Total Barnsdall			11	8,480	11	8,683
Carter	B. Carter	24– 9–6	2	190	2	235
Carter	J. Carter	24– 9–6	4	135	4	130
Carter	F. Carter	24– 9–6	3	695	3	775
Carter	R. Cudjo	35– 9–6	3	3,630	3	3,710
Carter	W. Cudjo	34– 9–6	1	740	1	900
Carter	Gilliland	27– 9–6	1	880	1	1,040
Carter	Grisso	23– 9–6	7	2,930	7	3,650
Carter	Knapp	13– 9–6	3	1,777	3	2,097
Carter	Killingsworth	34– 9–6	11	22,117	11	16,725
Carter	Lukes	27– 9–6	4	2,235	3	2,995
Carter	Simpson	35– 9–6	2	600	2	485
Carter	Strothers	34– 9–6	2	7,125	2	8,715
Carter	Vierson	23– 9–6	4	1,960	4	2,320
Total Carter			47	41,999	46	48,777
Empire	Wilson	34– 9–6	3	2,465	3	2,909
Gypsy	Butler	35– 9–6	3	1,368	3	1,522
Gypsy	Carter	24– 9–6	8	2,607	8	2,470
Gypsy	Fixico	26– 9–6	5	217	5	260
Gypsy	Harjo	25– 9–6	2	1,117	2	1,290
Gypsy	Wolfe	26– 9–6	6	2,505	6	2,742
Total Gypsy			24	7,817	24	8,264
Independent	P. Fixico	26– 9–6	8	1,592	8	1,749
Independent	B. Fixico	23– 9–6	3	240	3	345
Independent	Jones	26– 9–6	4	708	4	740
Total Independent			15	2,540	15	2,834
I. T. I. O.	Bowlegs	26– 9–6	10	4,901	10	5,256
I. T. I. O.	Goodin	23– 9–6	4	963	4	990
I. T. I. O.	Harjo	24– 9–6	4	780	4	947
I. T. I. O.	James	24– 9–6	4	1,398	4	1,313
I. T. I. O.	Reed	24– 9–6	3	21	3	38
I. T. I. O.	Marcy	13– 9–6	1	0	1	20
Total I. T. I. O.			26	8,063	26	8,564
Kingwood et al	Johnson	22– 9–6	5	3,379	5	3,897
Magnolia	Franks	25– 9–6	2	1,720	2	2,020
Mid-Cont	Rentie	14– 9–6	9	2,027	9	2,450
Mid-Cont	Tayeche	24– 9–6	7	685	7	915
Total Mid-Continent			16	2,712	16	3,365
Mid-Kansas	Johnson	25– 9–6	1	920	1	826
Mid-Kansas	Pressley	3– 9–6	1	215	1	314
Total Mid-Kansas			2	1,135	2	1,140
Philmack	Butler	35– 9–6	1	1,715	1	1,720
Phillips	Strothers	27– 9–6	2	1,385	1	0
Prairie	Gross	25– 9–6	5	240	5	230
Prairie	Spencer	13– 9–6	1	20	1	20
Prairie	Mason	36– 9–6	1	590	0	0
Prairie	Strothers	27– 9–6	6	3,130	6	3,280
Total Prairie			13	3,980	12	2,530
Pure	Strothers	26– 9–6	17	6,272	17	8,970
Pure	B. Strothers	36– 9–6	1	1,545	1	35
Total Pure			18	7,817	18	9,005
Roxana	Harber	22– 9–6	2	1,081	2	1,009
Roxana	Lashley	22– 9–6	2	424	2	318
Total Roxana			4	1,505	4	1,327
Sinclair	Carter	13– 9–6	2	40	2	40
Sinclair	Cudjo-A	35– 9–6	6	2,080	6	1,735
Sinclair	Cudjo-B	35– 9–6	3	1,800	3	1,770
Sinclair	Dicey	22– 9–6	1	980	0	0
Sinclair	Fixico	23– 9–6	4	1,335	4	1,200
Total Sinclair			16	6,235	15	4,745
Slick, T. B.	Cudjo	35– 9–6	3	2,556	2	2,661
Slick	Franks	35– 9–6	7	3,376	7	3,841
Slick	Giblett	35– 9–6	1	2,230	1	3,132
Slick	Born	35– 9–6	1	30	1	0
Total Slick			12	8,192	11	9,634
Superior	Cudjo	35– 9–6	4	3,570	4	4,991
Texas	Mayhue	14– 9–6	1	50	1	110
Tidal	Carter	24– 9–6	5	2,580	5	2,625
Tidal	Fixico	26– 9–6	7	2,595	7	3,005
Tidal	Harjo	23– 9–6	7	470	7	195
Tidal	Mahardy	24– 9–6	5	1,505	5	1,625
Tidal	Tayeche	25– 9–6	2	3,535	2	3,730
Total Tidal			26	10,685	26	11,180
Turman	Cudjo	35– 9–6	4	2,450	4	3,008
Turman	Grisso	35– 9–6	1	663	1	819
Turman	Jones	34– 9–6	4	7,639	4	8,222
Total Turman			9	10,752	9	12,049
TOTAL SEMINOLE PROPER			275	144,895	270	150,049
GRAND TOTAL SEMINOLE DISTRICT			436	360,108	413	344,232

	Wells	Production	Avg. per well
Hunton Lime	51	8,100	158.8
Shallow Sand	32	4,325	135.1
Wilcox Sand	353	347,683	984.9
	436	360,108	825.9

New Jersey Association Seeks to End Free Underground Installations

By Roger B. Stafford
N. P. N. STAFF WRITER

NEWARK, N. J., May 20.

AN attempt is to be made by the New Jersey Oil Trade Association in the next month to have all wholesale distributors of gasoline in New Jersey charge dealers for underground storage tanks and tank installations. A resolution providing for a canvass of all distributors in an effort to get full co-operation, was adopted without a dissenting vote at a luncheon meeting of the New Jersey association here today.

The action today was a first step, L. L. Niedrach, Beaver Oil Co., Mountain View, N. J., president of the association, told the oil and equipment men present. Later an effort will be made to curb the giving away or lending of pumps and lubricating oil equipment. A questionnaire was sent two months ago to gasoline and oil distributors in New Jersey, equipment manufacturers, and oil trade association officers in other states asking their opinion. A majority replied favoring selling equipment only.

Oil men, seemed unanimous in their desire to end giving away of dispensing equipment. Equipment manufacturers' representatives were opposed to a complete shifting of equipment sales from the oil jobbers and distributing refiners to the small dealers, but from the floor they did not protest the resolution which follows:

"Resolved the promiscuous distribution of gratis or loaned equipment for the dispensing of gasoline and other petroleum products is commercially unsound. It has resulted in increasing the cost of marketing gasoline to the dealer, with necessary increase in the cost of this fuel to the public; it has lessened the opportunities for fewer but more profitable outlets; increased the hazards of distribution, and has been the cost of other and increasing demands on the part of the dealer for special privileges.

"Be it further resolved, it is the feeling of this meeting that an effort be made to minimize this practice; that all companies marketing gasoline in the state of New Jersey be requested to make a charge for the underground storage tanks and the installation thereof; such charge to be based on actual cost, and that this change in policy be effective as of July 1, 1927.

"Without 100 per cent co-operation the movement necessarily fails. A copy of this resolution is to be mailed to every company marketing gasoline in the state of New Jersey, with the request that they inform the secretary of this association of their disposition to conform to this resolution. In the event of the lack of such evidence a committee to be appointed by the president of the association on June 15, and to consist of three marketers, to interview the marketing executive of such companies and report back to the association at the June meeting."

In the questionnaire these questions were asked of oil and gasoline distributors:

"Do you approve of a movement to modify or discontinue the present practice of loaning dispensing equipment.

"If so, how? (Check one of the following).

"Gasoline Equipment:
Sold outright at small profit.
Sold outright at cost.
Sold outright at installments.
Customer to pay for tank and installation, and only pump loaned.
Definite rental charged based on actual write off in three years.
Additional charge of 1c per gallon to be made until equipment is paid for.

"Lubricating Oil and Grease:
Equipment sold outright at cost.
Equipment sold outright at profit.
Equipment sold on installments.
Definite rental charged based on actual write off in three years.
Deposit equal to cost of equipment charged.
Equipment cost to be refunded if sales exceed a definite yearly volume."

These questions were asked the equipment manufacturer:

"Do you prefer the present method of selling direct to oil companies in large volume with minimum profit and intensive competition, as against having every retail dealer a prospect for new and more expensive equipment.

"Can you suggest a method of placing equipment, which will do away with present abuses?"

Returns showed a majority of distributors favored selling dispensing equipment outright to dealers. Many were willing to allow dealers to pay for equipment and installation on a gallonage basis, that is, paying 1 cent a gallon more for gasoline and a few cents more a gallon for oils until the tanks and pumps were paid for.

Equipment manufacturers were noncommital publicly but privately their representatives said they preferred the present method of selling large quantities of equipment to oil companies because it meant less sales effort, smaller sales forces and smaller selling costs. Against the latter arguments, Mr. Niedrach and other members of the New Jersey association contended that equipment manufacturers would be able to get more money for their goods and also be able to sell more expensive equipment to a concern that was equipping its own business than to a company that intended to give the equipment away or lend it.

Equipment is perhaps a much liver question in the East than it is in the Middle West and West. There are more dealers and relatively fewer distributors for the great volume of gasoline and motor oils consumed. Mr. Niedrach said he knew of many places in New Jersey where there were seven to nine gasoline pumps at a dealer's place of business, each installed free by different distributors. Gasoline dispensed through few of these pumps totaled as much as 100 gallons a week, he said. No pump could be made to pay a profit unless 2000 gallons a month were sold through it, he asserted.

Mr. Niedrach said the association was not so much opposed to lending pumps because the pump was a representative of the distributor, a sort of silent salesman, as to the distributors also supplying the underground equipment free. He said a 550-gallon gasoline tank cost around $40 but the installation cost was around $100 and there was no salvage in the expense of excavating, pipe fitting and cementing.

L. V. Nicholas, president, Independent Oil Men of America, Chicago, wired, "Free equipment and distorted and grotesque ideas on loaning equipment are economically unsound and an industrial disgrace. It takes needed profit out of the business and makes us a laughing stock to other lines of industry."

James A. Gilmore, secretary, American Oil Men's Association, Chicago, wrote: "The loaning of gasoline or lubricating oil dispensing equipment where the loan is in such manner that it can possibly be construed as buying the business, is to be condemned and any action that can be taken to stop it is worthy of all the co-operative effort that is needed to produce the result.

"We do not think that the sale of such equipment by an oil company to a customer either at cost or at a reasonable profit or on installments, should be criticised so long as the sale is bona fide and the payments are collected according to the contract. Any other manner of handling the equipment issue is very likely to be camouflage of the real intent of the deal and should be condemned, according to our notion."

Approval of the effort of the New Jersey association was sent by C. M. Gentry, Gentry Oil Co., Enid, Okla., who is president of the Southwest Oil Marketers' Association, and A. Oberholtz, Jr., secretary, Rocky Mountain Independent Oil Men's Association, Denver.

The New Jersey association's committee on loaned equipment is headed by James C. Elms, Jr., Co-Service Oil Co., Newark. J. H. Chambers of the same company is secretary of the association and R. Hunt, Industrial Oil Co., Richfield, is treasurer.

Completions in N.-E. Cent., West, Panhandle and N. Texas, Week ended May 20

NORTHEAST CENTRAL DISTRICT

Brown County

Company	Well Farm	Location Survey	Depth	Initial Prod.
McLester	21-Wooldridge	ET	1200–1220	30
Cranfill et al	1-Willis	ET	1620–1695	20
Hughes	10-Shore	Ryan	1274–1295	700
Hughes	23-Shore	Ryan	1289–1313	1200
Texas	26-Lowe	Stubblefield	1245–1255	150
Texas	35-Lowe	Stubblefield	1271–1298	200
Texas	45-Lowe	Stubblefield	1295–1322	350
Texas	48-Lowe	Stubblefield	1276–1298	720
Wentz	15-Shore	Betts	1312–1330	375
Dallas	1-Cook	Robinett	1010	Dry
Humble	5-Fry	Stubblefield	T.D.1332	Dry
Bowers et al	3-Cason	Perry	T.D.1575	Dry
Shoup	7-Byler	T&NO	T.D.1350	Dry
Ryan et al	2-Brooks	Hernandez	T.D.1244	Dry
Monroe	1-Sheffield	Benson	T.D.1403	Dry
Richards	1-Sheffield	Humphreys	T.D.1404	Dry
Russell et al	2-Oden	Huckow	T.D. 812	Dry

Callahan County

Martimer et al	4-Beasley	D&DA	T.D. 488	15
Brannon et al	1-Booth	Comal	T.D.1743	Dry
Warren et al	1-Wheeler	D&DA	682– 688	2M
Syndicate	1-Berry	Powell	T.D.1221	Dry
Swoveland et al	1-Horn	BBB&C	T.D.1605	Dry
Dickey	1-Williams	D&DA	T.D. 785	Dry
Humble	3-Hickman	SP	T.D. 555	Dry
Thompson	1-Jackson	BBB&C	T.D. 801	Dry
Martimer et al	5-Beasley	D&DA	T.D. 517	Dry
Murchison-Fain	1-McDermott	Vic	T.D.1803	Dry

Coleman County

Monroe	1-Caton	Wharton	1349–1364	2M
Texon et al	1-Seeley	SH&H	T.D.3375	Dry
Shields et al	1-Burkett	Holt	T.D. 803	Dry
Evans et al	1-Lowe	Wright	T.D.1500	Dry
Monroe	2-Harris	Stornes	T.D. 275	Dry

Eastland County

Hoffman et al	1-Webb	H&TC	1273–1280	8
M. T. C.	1-McAllister	T&TC	T.D.3035	400
Parsons et al	1-Love	Howell	T.D.3030	3M
Livingston et al	1-Hazel	H&TC	T.D.3450	40

Fisher County

Phillips et al	1-Webb	TP	T.D.3000	Dry
California	1-Anderson	TP	T.D.3375	Dry

Jack County

White	1-Smith	Weldon	T.D.2354	Dry

Jones County

Consolidated	1-Armand	H&TC	T.D.2514	Dry
Phillips	4-Tessie	TP	2518–2548	150

Limestone County

McCarty et al	1-Brown	Jackson	T.D.3201	Dry
Dillon et al	1-Jones	Flippen	T.D.3400	Dry

Mitchell County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Morrison et al	1-Griffity	TP	T.D.3170	Dry

Palo Pinto County

Dixie	1-Hart	TP	3890–3960	15

Shackelford County

Simmons	2-Harvey	TP	1647–1711	40
Gwinnup	1-Goodwin	TP	T.D.2003	Dry

Stephens County

Lacy et al	1-Bradshaw	TP	T.D.3385	Dry
Conway	1-Gardenhire	TP	1407–1430	7M
Edison et al	1-Smith	TP	1967–1974	15, 4M

S. Young County

Atkinson et al	5-Foard	Carter	2645–2655	142
Pitzer-West	2-Boozer	Garrett	T.S.3910	500

NORTH TEXAS

Archer County

Gulf Prod	1-Wilson	SP	1530–1541	150
Maer et al	4-Wilson	DL&C	1537–1542	200
Continental et al	12-Wilson	ATNC	1433–1440	20
Staley et al	3-Tuberville	Carson	1458–1482	235
Continental	11-Oldham	SP	1343–1363	30
Navarro	2-Wilson	ATNC	T.D.1500	Dry
Texas et al	1-Tuberville	Harris	T.D.1651	Dry
Abercrombie et al	1-Jones	Harris	T.D.1503	Dry

Cooke County

Oil Oper	4-Kleiss	Littleton	1575–1597	185
Fain et al	1-Vestal	CRR	985– 995	18
Thornton	1-Spencer	Toby	T.D.1550	Dry

Clay County

Stump et al	1-Doddy	HTR	T.D.1317	Dry
Seaberry et al	1-Cozart	TE&L	T.D.1170	Dry
Eastern	1-Bowen	TE&L	T.D.1000	Dry

Wichita County

Bridwell et al	1-Sawyer	Waggoner	T.D.1981	Dry
Grayse	3-Downey	WVFL	T.D.1975	Dry
Jno. O'Neil et al	1-Chilton	Denton	T.D.1855	Dry
Consolidated	1-Ancel	H&TC	1717–1721	125
Simms et al	1-Waggoner	George	782– 804	18

Wilbarger County

Gulf Prod	3-Blackman	McKinney	1471–1494	60
Gulf Prod	4-Blackman	DL&C	1474–1493	95
Consolidated	3-Waggoner	H&TC	1226–1235	38
Fain et al	1-Waggoner	H&TC	1940–1947	18
Phillips	1-Waggoner	H&TC	T.D.2745	Dry

Young County

Moran	5-Stewart	Dawson	730– 780	100
Rigs et al	1-Brown	Tyner	538– 559	8
Madden et al	1-Benson	TE&L	T.D.1232	Dry
Alstrum et al	1-Farmer	BB Nav. Co.	T.D. 832	Dry

(Continued from page 26)

SEc NW SE of 16-8-6. This is T. B. Slick No. 1 Fox, which had a hole full of water in the Wilcox from 4318 to 4324 feet. South and west of production another deep dry hole was completed by Independent Oil & Gas Co. and Marland Oil Co. in their semi-wildcat test in the NEc SE NE of 21-8-6, about a half-mile from production.

THE best well in the Earlsboro field this week was the No. 1 Bryant of Magnolia Petroleum Co. and Wrightsman Petroleum Corp., in the SEc NW of 9-9-5. This well is in the Wilcox at total depth of 4301 feet and made 3610 barrels in 24 hours. It is a half-mile east of the Crosbie-Bryant well and about the same distance south of the Amerada & Hull Cowden well, both of which extended the field. Phillips Petroleum Co. No. 4 Graham, in the SWc NW SE of 9-9-5, is showing for about 1000 barrels in the Wilcox from 4305 to 4318 feet.

A number of good wells have been drilled in recently in the Burbank field, Osage county, and production of that great pool has been up about 2000 barrels in the past two weeks. Skelly Oil Co., which paid $550,000 for the SW of 27-27-6 at the Osage sale of last March, now has four completed wells producing 2780 barrels a day and three drilling. This company started seven wells immediately after the lease was purchased.

Skelly's No. 3 on this lease, in the SEc SW SW, is making 70 barrels an hour after a shot of 150 quarts. It got the Burbank sand at 2882 feet, first oil at 2892 and has been drilled to 2959 feet, where it started off making 37 barrels an hour natural. The same company's No. 5, in the NWc SW SW, is making 50 barrels an hour natural in the sand from 2895 to 2967 feet. Its No. 1, in the SEc of the lease, looks like a dry hole, as it was drilling at 2930 feet at last reports without having found the sand, which had been expected at around 2885 feet.

North of the old Thomas field, Kay county, Marland Oil Co. has a good well in the Wilcox sand in its No. 1 Chambers, in the NEc NW SE of 9-25-2W. This well got the sand at 4265 feet and is flowing 80 barrels an hour at total depth of 4272 feet. This well apparently opens a new pool and will probably start considerable drilling in the vicinity.

Another interesting Wilcox sand test is the No. 1 Ramsey of the Pure Oil, in the SEc NE SE of 7-18-4, Payne county. This well is making 1100 barrels of 45-gravity crude in sand from 4112 to 4118 feet. It is just east of the town of Mehan and about two miles northeast of the field of the same name, sometimes called the Deep Rock field.

Corrosion Committee Will Meet June 15

NEW YORK, May 21.—Dr. Frank N. Speller, chairman of the preliminary committee on corrosion of the American Petroleum Institute has called a meeting of his committee to be held at the Broadmoor Hotel, Colorado Springs, Co., Wednesday afternoon, June 15. Dr. Speller, who is metallurgist of the National Tube Co., took the chairmanship of the preliminary committee at the urgent request of President E. W. Clark of the Institute, at the meeting in Tulsa last January.

The committee recently sent out a questionnaire to all member companies of the Institute asking for their experience and their ideas on fighting the corrosion problem. The information sent in in response to these questionnaires will be canvassed and definite methods worked out for combating the problem.

Gulf Lube Movement Normal

HOUSTON, May 21.—Gulf Coastal lubricant manufacturers report normal seasonal movements of pale and red oils. The market is generally quiet, shipments on contracts exceeding spot sales.

Completions in Oklahoma and Kansas, Week Ending May 21

OKLAHOMA

Caddo County

Company	Well	Location	Depth	Initial Prod.
Ray et al	1	Blk 59	1935–2380	40

Carter County

Company	Well	Location	Depth	Initial Prod.
Magnolia	5	SWc NW SW 19-1-3W	2160–2855	1475
Magnolia	1	NWc NE 23-1-3W	2290–2340	406

Creek County

Company	Well	Location	Depth	Initial Prod.
Shaffer	3	NEc SE SE 17-17-8	3456–3512	130
Henson et al	1	Turkey Mtn.	2249–2253	40
Thompson-Black	1	NEc SE NW 12-17-10	2414–2421	216
Cumberland	5	CEL NE SE 13-17-10	1860–1878	35
Pontiac	2	SEc SW NW 13-17-10	2442–2465	800
Eliza Tim	2	SWc 9-17-11	2092–2103	3M
Cole et al	3	CWL NW SW 18-17-11	1837–1859	25
Twin State	1	NEc SW NE 2-16-11	2644–2648	60
Atlantic et al	4	SEc NW NW 16-14-10	3215–3231	230
Prairie	1	SEc SE NE 35-15-7E	2610–2622	35
Wright	17	C NE NW 24-17-10	1817–1862	60
G. M	1	NEc NW SW 7-18-10	3155	Dry
Short	1	Blk 20 Oakhurst	T.D.2307	Dry
Kolb et al	1	Blk 16 Oakhurst	T.D.2315	Dry

Grady County

Company	Well	Location	Depth	Initial Prod.
Carter	1	NEc SW NE 21-3-5W	1724–1744	150
Carter	1	NEc SE SE 21-3-5W	1726–1730 OWD	90
Magnolia	1	SEc NE SW 22-3-5W	T.D.2262	13M
Empire	1	SEc SW SW 25-4-6W	T.D.2660	Dry
Smith	1	NEc NW SE 1-3-6W	T.D.2619	Dry
Empire	1	SWc SE SW 22-3-5W	T.D.2427	Dry

Hughes County

Company	Well	Location	Depth	Initial Prod.
Dixie	1	SWc 17-8-10E	3922–3923	100

Kay County

Company	Well	Location	Depth	Initial Prod.
Sinclair	1	SEc NW 19-27-1W	3482–3551	51.6M
Prairie	8	NEc N½ SE 1-26-2W	T.D.3897	80
Prairie	10	NWc NE SE 1-26-2	3608–3700	450
Prairie	11	NWc N½ NE 1-26-2W	T.D.3815	100

McIntosh County

Company	Well	Location	Depth	Initial Prod.
Sheppard et al	3	SEc SW SE NW 12-12-16E	T.D.3248	Dry

Muskogee County

Company	Well	Location	Depth	Initial Prod.
Jolly-Ogg	1	NEc SW NE 17-15-17	T.D.2110 OWD	Dry
Sommerville	1	SEc NE NW NE 17-15-17	T.D.1467	75

Noble County

Company	Well	Location	Depth	Initial Prod.
Bu-Vi-Bar	1	NEc NW 12-21-3E	4133 T.D. OWD	Dry

Okfuskee County

Company	Well	Location	Depth	Initial Prod.
McMahon et al	1	NWc SE NE 29-12-10	3143–3144	140
Amerada	1	NEc SW 14-11-10	3230–3229	14
Umburn	2	SWc NW SW 36-11-11	2524–2569	12M

Okmulgee County

Company	Well	Location	Depth	Initial Prod.
Morgan	1	NEc NW 13-11-13	1207–1288	½M
Nicholson	1	C NW SW 13-11-13	1277–1317	¼M
Iron Mtn	2	NEc SE SW 34-16-11	T.D.3248	Dry
Stout	2	CNL NE NE 30-16-14	T.D.1757	Dry
Wheeler et al	1	NWc NE SE 13-15-11	T.D.2781	Dry
Holmes et al	2	CEL NE NW 5-15-12	T.D.2747	Dry

Osage County—Burbank

Company	Well	Location	Depth	Initial Prod.
Phillips	11	SWc NE SW 7-27-6E	2969–3005	50
Phillips	3	NEc NW SW 17-27-6	2923–2987	100
Gypsy	4	SEc NE SE 28-27-6	2877–2959	1364
Gypsy	5	NEc SE 28-27-6	2888–2970	1517

Osage County

Company	Well	Location	Depth	Initial Prod.
Simmons	3	SWc NE SW SW 30-24-9E	T.D.2169	Dry
I. T. I. O	361	SWc NW 20-23-10	T.D. 583	Dry
S. S. Home	1	SWc NE 23-20-10	T.D.2750	Dry

Pawnee County

Company	Well	Location	Depth	Initial Prod.
Sheltz et al	4	CWL SW NE 7-20-8	T.D.2930	Dry

Payne County

Company	Well	Location	Depth	Initial Prod.
Twin State	1	SWc 14-19-5	2785–2794	40

Pottawatomie County—Seminole

Company	Well	Location	Depth	Initial Prod.
Wrightsman	1	NWc NE NW 30-7-4E	3775–3793	1600

Rogers County

Company	Well	Location	Depth	Initial Prod.
Swift-Davis	1	CEL SE NW 6-19-17	T.D. 508	Dry

Seminole County

Company	Well	Location	Depth	Initial Prod.
Wrightsman	1	NEc NW NE 20-9-6	T.D.4215	Dry
Indep. et al	3	SWc NW SE 35-9-6	T.D.1280	Dry
Transcontinental	6	NWc SE SW 22-7-7	T.D.2202	Dry
Mid-Cont	1	NEc SE SW 33-10-6	4200–4252	50
Mid-Cont	5	CSW SW 34-10-6	4095–4194	600
Barnsdall	1	NWc NE NW 15-9-5	4183–4282	5010
Gypsy	1	SEc SW 9-9-5	4288–4292	1277
Gypsy	2	NEc SE SW 9-9-5	4290–4302	2660
Kingwood et al	3	NEc SE 22-9-6	4266–4349	40
Roxana	2	NEc SW SE 22-9-6	4250–4261	146
Indep	4	NWc SW SW 23-9-6	4247–4290	496
Tidal	3	NWc SW SW 23-9-6	4105–4184	30
I. T. I. O	10	NEc NE NE 26-9-6	4108–4138	102
Barnsdall	4	SWc NE NE 34-9-6	4065–4121	500
Turman	4	SWc SE NE 34-9-6	4076–4134	3000
Atlantic	4	SEc NE SW 35-9-6	4146–4195	204
Slick	1	NWc SW SE 35-9-6	4238–3261	111
Independent	1	SWc NE NE 7-9-8	3245–3274	175
Pure	1	SEc NE SE 14-8-6	4278–4294	6278
Pure	7	NEc SE 14-8-6	4212–4228	6165
Magnolia	5	NWc SW 32-8-8	3880–4023	514

Waggoner County

Company	Well	Location	Depth	Initial Prod.
Creekmore et al	8	NWc NE SW 21-18-16	681– 698	10
Creekmore	9	NEc NW SW SW 21-18-16	717– 728	2
Creekmore	10	NWc SW SW 21-18-16	782– 790	.10M
Wilson	1	NWc NE NW 14-16-16	1536–1579 OWD	2M
Green et al	1	SWc NW NE NE 34-19-15	T.D.1360	Dry
Green et al	1	NWc SW NW 35-19-15	T.D.1222	Dry
Taylor	1	SEc SW SW 11-18-15	T.D.1383	Dry
Creekmore et al	7	NEc NW SW 21-18-16E	T.D. 815	Dry
Vick	4	SEc 29-18-16	T.D. 793	Dry
McIntyre et al	1	NWc NE SW 7-18-17	T.D. 935	Dry
McIntyre et al	2	SWc NE SW 7-18-17	T.D. 622	Dry

KANSAS

Barton County

Company	Well	Location	Depth	Initial Prod.
Rankin et al	1	C SE SE 28-18-12W	T.D.2563	Dry

Butler County

Company	Well	Location	Depth	Initial Prod.
Rogers et al	15	NEc NW SE 20-26-8E	2705–2758	75
Rogers et al	16	SWc SE 20-26-8E	2695–2735	75
Federal	11	CNL NE NE 31-26-8E	2704–2754	100
Rosenthal et al	4	NWc NE SE 4-27-6E	3176–3180	60
Magnolia	2	SWc NW NW 34-27-6E	3066–3075	50
Patton et al	1	NWc SW NW 34-27-6E	3087–3092	50
Empire	44	NEc SE SE 10-28-4E	2564–2566	50
Mid-Kansas	1	NWc SW SE 3-28-6E	3036–3042	35
Skelly et al	1	NWc SE 8-24-4E	T.D.2563	Dry
Shawver et al	1	NWc SE 28-29-3E	T.D.3270	Dry

Chase County

Company	Well	Location	Depth	Initial Prod.
Kewanee	1	C SW SE 32-18-7E	T.D.1170	Dry

Chautauqua County

Company	Well	Location	Depth	Initial Prod.
Griffen et al	3	N½ SW NW 1-32-10E	1996–1997	2M

Cowley County

Company	Well	Location	Depth	Initial Prod.
T. B. Slick	4	NWc SW NW NE 22-32-4E	2299–2376	60
T. B. Slick	1	SWc NW 20-32-3E	T.D.3564	Dry

Elk County

Company	Well	Location	Depth	Initial Prod.
Pure Oil Co	19	CWL SW SE 14-31-10E	1637–1649	60
Union	11	NEc SE SE SW 14-31-10E	1635–1650	100
Frazier et al	5	NWc NE NW 23-31-10E	1637–1647	100
J. S. Cosden et al	1	SEc NE SE SE 28-29-10E	T.D.2335	Dry

Greenwood County

Company	Well	Location	Depth	Initial Prod.
Frazier et al	55	SE 19-22-10E	2277–2353	100
Sinclair	56	CWL SW SW 20-22-10E	2319–2394	100
White et al	3	NEc NW NE 26-24-9E	2102–2124	25
Empire	5	NEc SE SE 18-24-11E	1825–1839	15
Abel, Rodes et al	1	NE NEc SW 17-24-13E	1593–1605	20
Houser et al	1	SWc SE NE NW 34-24-11E	T.D.1926	Dry
Superior	1	NWc NE NE 22-27-9E	T.D.2293	Dry

Lyon County

Company	Well	Location	Depth	Initial Prod.
Icy et al	1	SEc SW SE 16-21-10E	T.D.2222	Dry
Balliere et al	1	C NE NE 22-21-21E	T.D.2006	Dry

Marion County

Company	Well	Location	Depth	Initial Prod.
Ark. Fuel Oil Co	1	SEc SW 8-17-3E	T.D.3145	Dry

Rice County

Company	Well	Location	Depth	Initial Prod.
Skelly	2	SWc SE 35-20-6W	3385–3482	25
Independent	5	NEc NW 2-21-6W	3376–3436	120

Sumner County

Company	Well	Location	Depth	Initial Prod.
Vickers et al	3	SEc NE SE 24-31-2E	T.D.2010	Dry

Woodson County

Company	Well	Location	Depth	Initial Prod.
Peerless	5	SWc NW SE 23-26-14E	1210–1266	200
Peerless	6	SWc NW SW NE 23-26-14E	1188–1294	250
Peerless	7	NWc NE SW NE 23-26-14E	1195–1301	250
Peerless	8	NEc SW NE 23-26-14E	1237–1322	200
Peerless	9	SEc NE SW NE 23-26-14E	1219–1286	200
Peerless	4	SEc NE NW 23-26-14E	1220–1267	285
Peerless	5	SWc NE SE NW 23-26-14E	1216–1280	200
Peerless	6	NWc NE SE NW 23-26-14E	1212–1262	250
Sullivan et al	1	NEc SE 2-24-13E	T.D.1807	Dry
Culp et al	1	NEc SE NW 22-26-14E	T.D.1526	Dry
Brinegar et al	1	NWc NE 23-26-14E	T.D.1285	Dry
Peerless	1	NWc NE SE 27-26-14E	T.D.1438	Dry
Allison et al	1	NWc 20-26-15E	T.D.1444	Dry

Completions in North Louisiana and Arkansas, Week Ending May 20

LOUISIANA

Caddo Parish—Vivian

Company	Well	Location	Depth	Yield
Ohio Oil Co	M. Fortner No. 1	5–22–16	3073	dry aband.

Caddo Parish—Caddo District

Company	Well	Location	Depth	Yield
W. D. Chew	Fee No. 5	33–21–16	1847	25
Dixie Oil Co. (Standard of Ind.)	Robertshaw No. 81	13–21–15	3647	35m. gas
Standard Oil Co. of La	Stiles No. 183	33–21–16	1835	50

Caddo Parish—Blanchard

Company	Well	Location	Depth	Yield
B. A. Hardey, trustee	Thigpen-Herold No. 2	26–18–16	911	10m. gas

Caddo Parish—Waskom

Company	Well	Location	Depth	Yield
Owl Oil Company	Bell No. 1	5–17–16	1952	dry aband.

ARKANSAS

Smackover

Company	Well	Location	Depth	Yield
Lion O. & R. Co	Lawton A-11	10–16–15	2395	500
La. Oil Ref. Corp	Murphy H-2	9–16–15	2315	100
Magnolia Pet. Co	R. E. Freeman No. 3	7–16–16	2692	35
Stewart et al	Murphy No. 5	9–16–15	2755	10m. gas
Sun Company	Hays No. 20	8–16–15	2355	50
Sunny Jim Oil Co	Flenniken No. 4	7–16–15	2701	10m. gas

Union County—Urbana

Company	Well	Location	Depth	Yield
Marine Oil Co	Winn Estate B-1	10–18–13	2690	65m. gas

'GAS' PREDICTED IN ALL COLORS

CHICAGO, March 26.—Red, blue pink, water-white nd purole gasoline is in prospect, according to Dr. Gustav Egloff, chemist.

He also predicts that the new cracking processes for crude petroleum will produce a variety of odors in gasoline that will freight the air with lovely perfumes.

"Not only should the public get used to all sorts of colors in gasoline, but to all sorts of odors as well," the doctor suggests.

"The modern cracking process is responsible for these new characteristics, but the motor will operate as well with the yellow as with the water-white, blue, pink or even red gasoline.

Reprint of article published in the Milwaukee Sentinel, March 26, 1927

BOLENE Blue Seal GASOLENE

A Year Ahead of Science

Over a year ago Bolene produced and distributed colored gasolene. The progressive policy of this company anticipated the prophecy of Science by more than a year.

This same progressiveness is apparent in the performance quality of Blue Seal Gasolene. The motorists demand for a better fuel is met in Bolene Blue Seal Gasolene.

It is produced and sold strictly on a guarantee of greater performance. More mileage, more pep, more power, less carbon and no-knock are the reasons why motorists prefer it.

Bolene Blue Seal Gasolene is the motor fuel that will increase your gallonage.

Write or wire for quotations and specifications.

BOLENE REFINING CO.
Refineries at Enid, Oklahoma

Producers of Quality Gasolene, Kerosene, Motor Oil, Fuel Oil and Distillate.

Blue Seal
BOLENE
GASOLENE

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

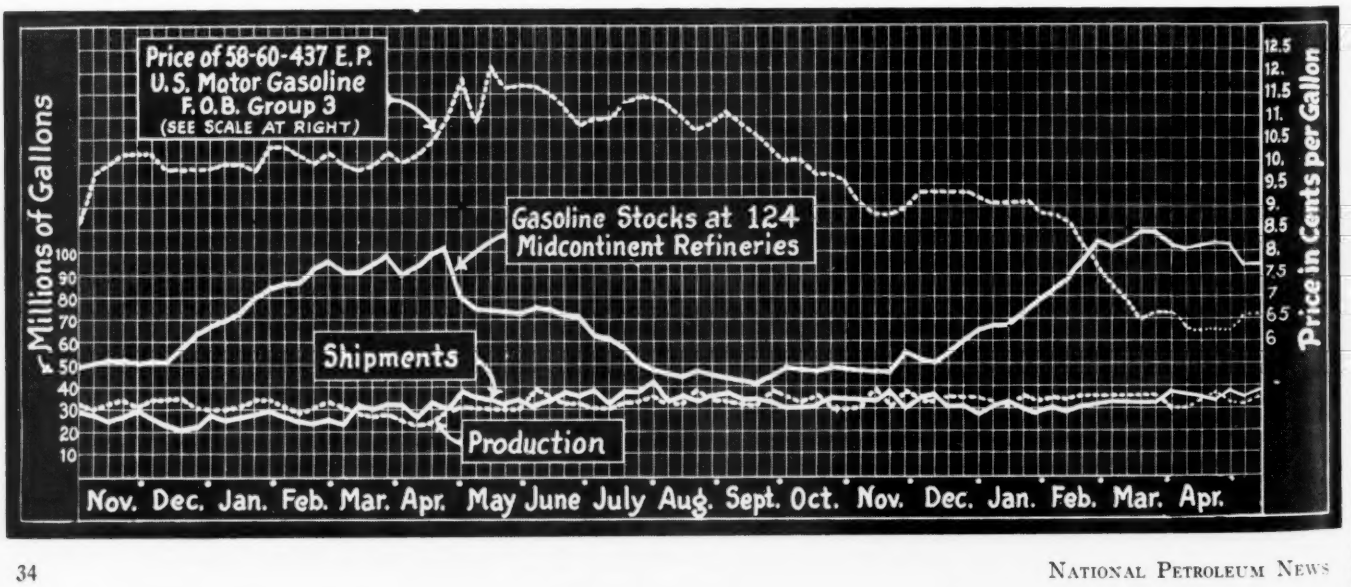
Mid-Continent Refinery Operations Week Ended May 20 (By Telegraph)

	Kansas	Oklahoma	North and Cent. Texas	North La.-Ark.	Total Week Ended May 20	Total Week Ended Apr. 22
Plants Reporting	23	46	41	14	124	124
Crude Cap. (Bbls.)	98,200	165,900	144,300	53,770	462,100	462,100
Cracking Capacity	21,000	45,800	15,750	20,200	102,750	102,750
Da. Av. Crude Runs	58,170 — 1.7	112,583 — 0.3	67,162 + 6.7	49,672 + 3.6	287,587 + 1.6	287,006
Da. Av. Other Oils	7,195 +45.4	1,074 —81.2	2,055 —61.2	1,884 +110.0	12,208 —27.5	11,012
GASOLINE—Gallons						
Stocks May 13	15,120,000	58,614,000	18,807,000	4,823,000	97,364,000	101,739,364
Prod. 5-13 to 5-20	8,602,000 — 1.2	17,427,000 — 3.3	7,556,000 + 9.3	3,565,000 + 6.7	37,150,000 + 0.5	34,448,321
Ship. 5-13 to 5-20	8,785,000 +10.9	17,753,000 — 6.2	7,431,000 — 3.2	3,258,000 — 20.0	37,227,000 — 3.5	32,972,709
Stocks May 20	14,937,000 — 1.2	58,288,000 — 0.6	18,932,000 + 0.7	5,130,000 + 6.4	97,287,000 — 0.1	103,214,976
Ratio Sales to Prod	102.1%	101.9%	98.3%	91.4%	100.2%	95.7%
KEROSENE—Gallons						
Stocks May 13	2,054,000	6,591,000	2,930,000	1,144,000	12,719,000	15,329,551
Prod. 5-13 to 5-20	2,068,000 +40.8	2,803,000 — 6.4	1,469,000 —11.1	544,000 + 20.1	6,884,000 + 4.8	5,848,928
Ship. 5-13 to 5-20	1,864,000 + 4.1	3,621,000 — 3.7	2,009,000 +92.8	839,000 + 16.9	8,333,000 +14.0	6,381,651
Stocks May 20	2,258,000 + 9.9	5,773,000 —12.4	2,390,000 —18.4	849,000 — 25.8	11,270,000 —11.4	14,796,828
Ratio Sales to Prod	90.1%	129.2%	136.8%	154.2%	121.0%	109.1%
STOVE DISTILLATE—Gallons						
Stocks May 13	2,370,000	2,554,000	876,000	75,000	5,875,000	6,814,579
Prod. 5-13 to 5-20	242,000 +36.7	378,000 + 3.3	321,000 +50.7	63,000 + 3.3	1,004,000 +22.9	955,470
Ship. 5-13 to 5-20	131,000 +14.9	354,000 —31.1	403,000 +92.8	72,000 + 12.5	960,000 + 6.5	1,289,427
Stocks May 20	2,481,000 + 4.7	2,578,000 + 0.9	794,000 — 9.4	66,000 — 12.0	5,919,000 + 0.7	6,480,622
Ratio Sales to Prod	54.1%	93.7%	125.5%	114.3%	95.6%	135.0%
GAS OIL—Gallons						
Stocks May 13	5,359,000	41,617,000	10,706,000	8,092,000	65,774,000	65,115,130
Prod. 5-13 to 5-20	1,545,000 — 5.5	2,635,000 —23.2	1,275,000 +23.2	1,541,000 — 4.6	6,996,000 — 9.4	9,609,458
Ship. 5-13 to 5-20	1,743,000 + 9.6	2,723,000 +11.4	711,000 +49.1	3,220,000 +114.8	8,397,000 +39.7	7,261,676
Stocks May 20	5,161,000 — 3.7	41,529,000 — 0.2	11,270,000 + 5.3	6,413,000 + 20.7	64,373,000 — 2.1	67,462,912
Ratio Sales to Prod	112.8%	103.3%	55.8%	209.0%	120.0%	75.6%
FUEL OIL—Gallons						
Stocks May 13	12,966,000	36,984,000	24,580,000	9,751,000	84,281,000	81,521,359
Prod. 5-13 to 5-20	6,860,000 + 9.4	7,317,000 — 1.2	8,776,000 — 2.6	6,565,000 — 13.5	29,518,000 — 2.5	29,720,362
Ship. 5-13 to 5-20	7,791,000 +12.7	10,011,000 +31.4	10,353,000 +22.2	6,382,000 + 12.5	34,537,000 +20.5	29,693,010
Stocks May 20	12,035,000 — 7.2	34,290,000 — 7.3	23,003,000 — 6.4	9,934,000 + 1.9	79,262,000 — 6.0	81,548,711
Ratio Sales to Prod	113.6%	136.8%	118.0%	97.2%	117.0%	99.9%

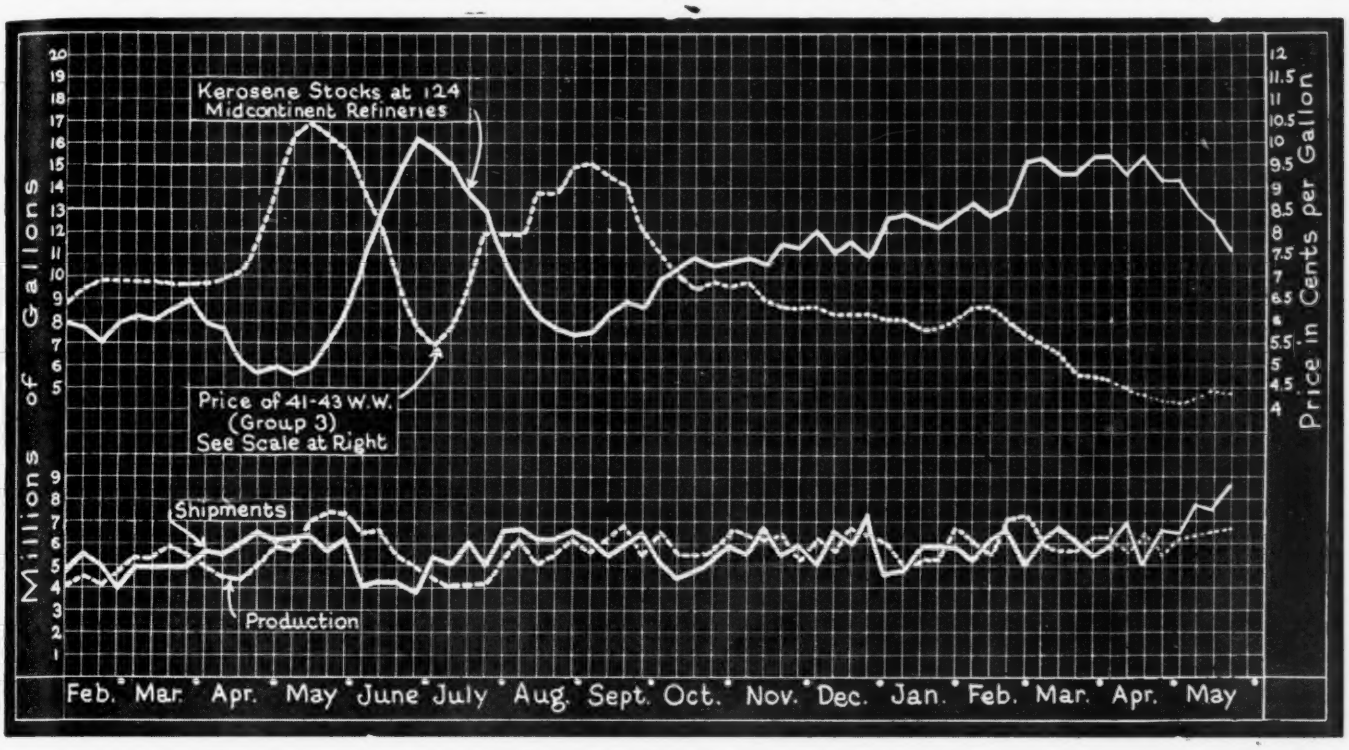
Gasoline Produced by Various Methods, Week Ended May 20

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,415,000	74.5	12,905,000	74.1	6,562,000	86.8	1,310,000	36.7	27,192,000	73.2
Cracked	1,667,000	19.4	3,013,000	17.3	821,000	10.9	1,906,000	53.5	7,407,000	19.9
Natural	520,000	6.0	1,509,000	8.6	173,000	2.3	349,000	9.8	2,551,000	6.9
Total	8,602,000		17,427,000		7,556,000		3,565,000		37,150,000	

+ or — columns are % change over previous week.


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3 (SEE SCALE AT RIGHT)
Gasoline Stocks at 124 Midcontinent Refineries
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr.

Barometer of Mid-Continent Refinery Market—Week Ending May 20


Kerosene Stocks at 124 Midcontinent Refineries
Price of 41-43 W.W. (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

Stocks of All Products but Distillate Reduced

Staff Special—By Telegraph

TULSA, May 24.

STOCKS of all principal products except stove distillate were reduced at 124 Mid-Continent refineries in week ended May 20, operators reported to NATIONAL PETROLEUM NEWS. Heavy drafts were made on kerosene, gas oil, and fuel oil stocks but only a slight draft on gasoline. The increase in stove distillate reserves amounted to only 54,000 gallons.

Crude oil charges to stills were increased 4500 barrels daily average at all plants to 287,587 barrels average. Refiners reduced their charges of partly refined oils 4600 barrels daily average to 12,208 barrels.

Gasoline shipments continued at a high rate although less than the rate in the preceding week. Shipments totaled 37,227,000 gallons. Kansas refiners increased their shipments nearly 1,000,000 gallons over the preceding week's shipments but movement from other districts was less, the largest decline having been in north Louisiana and Arkansas.

Gasoline production was reduced slightly in Oklahoma and Kansas but increased a little in Texas, north Louisiana and Arkansas. Output at the 124 plants was increased 175,000 gallons to 37,150,000 gallons. Of this volume 27,192,000 gallons or 73.2 per cent was produced by skimming, 7,407,000 gallons or 19.9 per cent, by cracking, and 2,551,000 gallons or 6.9 per cent, by use of natural gasoline. Cracking is being kept well below normal.

Shipments of kerosene increased 1,000,000 gallons or 14 per cent. Shipments for the week totaled 8,333,000 gallons, compared with 7,311,000 gallons in the preceding week. The largest increases were in Texas, north Louisiana and Arkansas. Oklahoma moved a little less than in the preceding week. Production of kerosene was stepped up 300,000 gallons to 6,884,000 gallons. Stocks were cut 1,500,000 gallons, or 11.4 per cent, to 11,270,000 gallons.

Stove distillate shipments also were larger but less than 1,000,000 gallons. Stocks increased 44,000 gallons to 5,919,000 gallons.

Shipments of gas oil were 2,300,000 gallons more than in the week before, jumping to 8,397,000 gallons. Production was reduced about 700,000 gallons to 6,996,000 gallons. Refiners lowered stocks 1,400,000 gallons.

Fuel oil shipments totaled 34,537,000 gallons, an increase of 6,000,000 gallons, or 20.5 per cent. Fuel oil productions was cut 750,000 gallons to 29,518,000 gallons. Refiners reduced stocks 5,000,000 gallons to 79,262,000 gallons. This was one of the largest reductions in fuel oil stocks since the height of winter fuel season.

Summary for the Month

Production and shipments, all reporting refineries for four weeks ended May 20. Change in stocks figured from April 22.

Gasoline

	Gallons
Production	141,626,000
Shipments	147,554,000
Net change in stocks	—5,928,000
Ratio sales to production	104.2%

Kerosene

	Gallons
Production	25,794,000
Shipments	29,321,000
Net change in stocks	—3,527,000
Ratio sales to production	113.7%

Stove Distillate

	Gallons
Production	3,368,000
Shipments	3,930,000
Net change in stocks	—562,000
Ratio sales to production	116.7%

Gas Oil

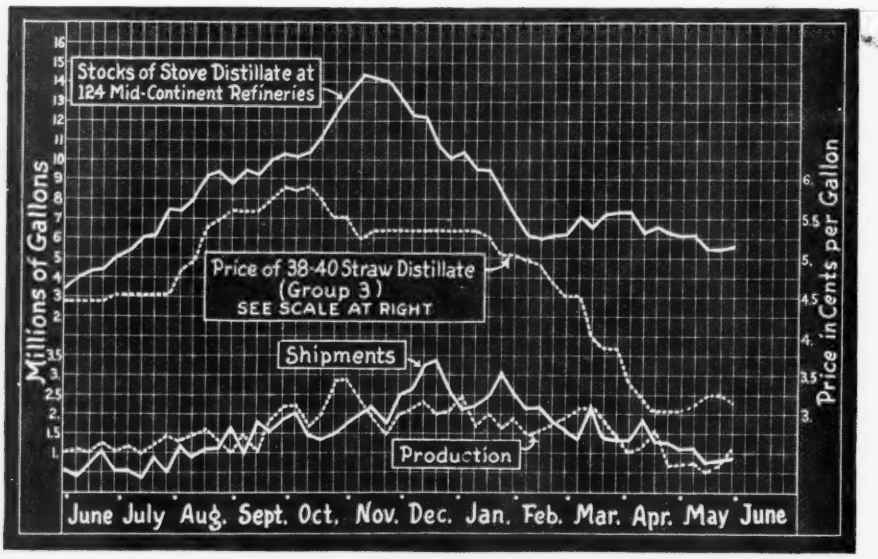
	Gallons
Production	31,708,000
Shipments	34,798,000
Net change in stocks	—3,090,000
Ratio sales to production	109.7%

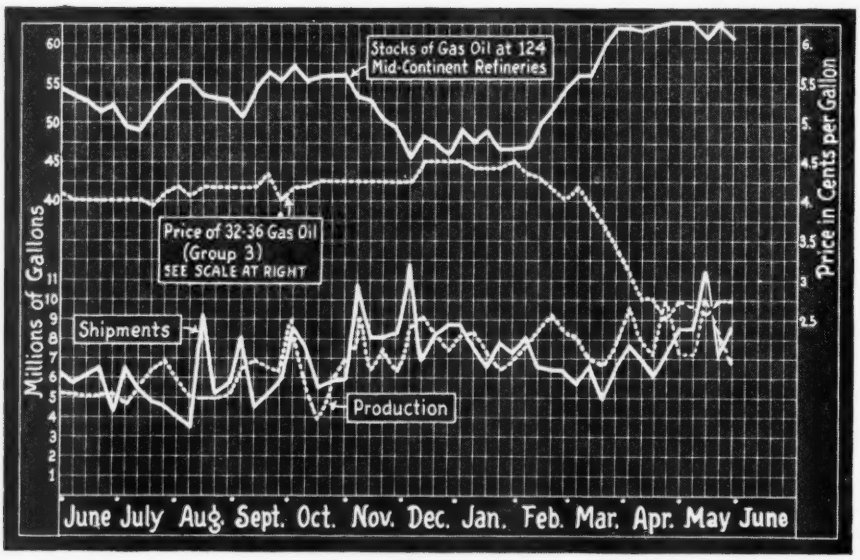
Fuel Oil

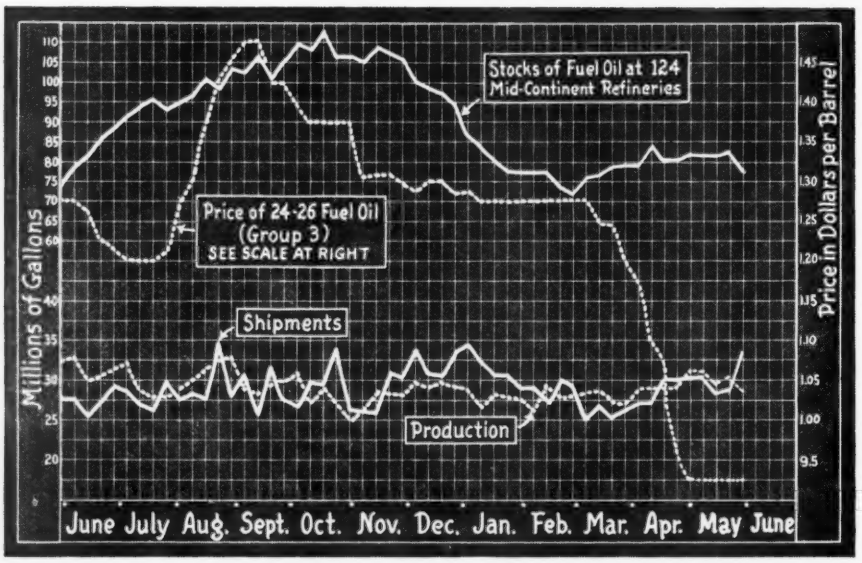
	Gallons
Production	120,673,000
Shipments	122,960,000
Net change in stocks	—2,287,000
Ratio sales to production	101.9%

Barometer of the Mid-Continent Refinery Market

Week Ending May 20


Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Dollars per Barrel
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Stabilizer Patent Suit to Be Heard June 1

Staff Telegram

TULSA, May 24.—Trial of the suit brought by the Carbide & Carbon Chemicals Corp. against Phillips Petroleum Co. for alleged infringement of natural gasoline stabilizer patents will begin at Wilmington, Del. on June 1. The trial will be held in the U. S. District court before Judge Hugh M. Morris who recently has heard a number of other oil industry patent suits.

Principal attorneys for Phillips are George A. Prevost and Robert E. Barry. A similar suit brought by the Carbide & Carbon Chemicals against The Texas Co., is pending in the U. S. District Court at Houston, Tex.

Marketers to Advertise with Aid of Airships

MACON, MO.—The Fower Oil Co., whose members have been aviators for six years, began construction of a service station here in November and opened it on April 1. A home, consisting of four rooms and bath, was built along with the station for Mr. and Mrs. Charles Fower, proprietors. The living room also serves as a rest room for customers.

This company's station is the only one in this town giving day and night service. The Alemite greasing system is used.

Airships will play a part this year in the company's advertising, according to Mrs. Charles Fower.

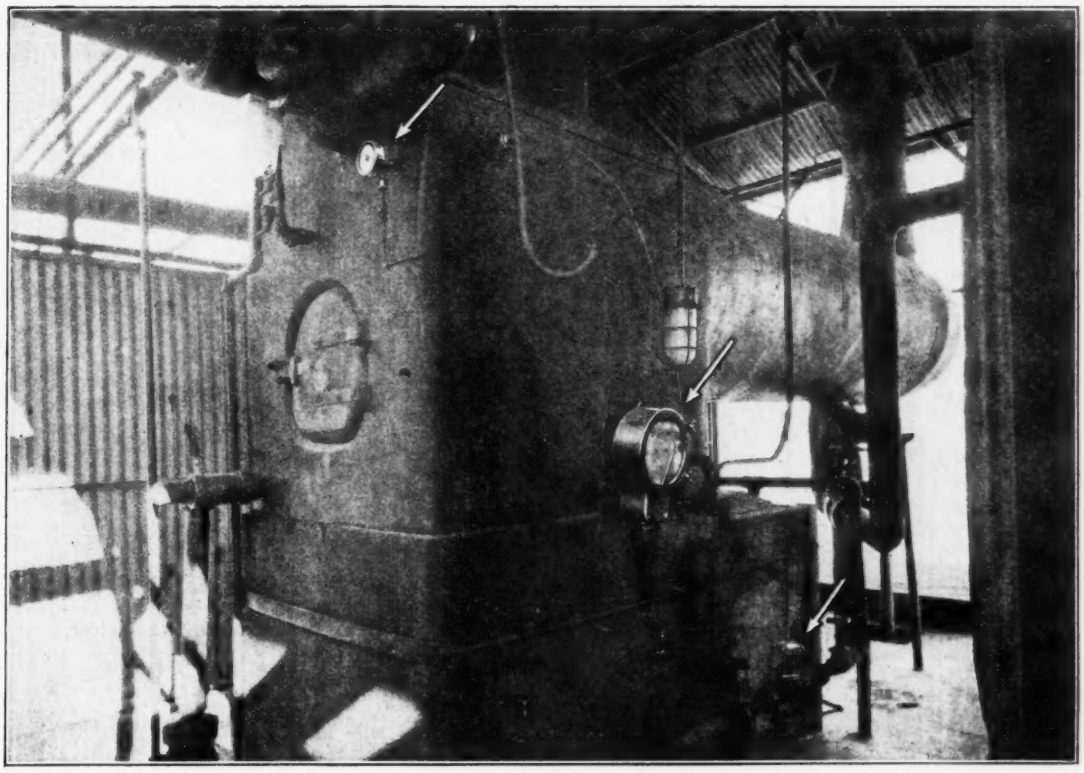
Station and Tourist Camp Opens

LAMAR, MO.—The new super service station of the Liberty Oil Co., with headquarters here, was opened May 21 and 22. A half gallon of motor oil with every purchase of five gallons of gasoline was the opening day attraction. A tourist camp will be operated in connection with the station and water and fuel at a nominal charge will be provided. Tourists supplies and refreshments will also be carried, according to Harry Blair, proprietor.

Homer Ridder, service station salesman at station No. 2 at Watertown, S. D. of the White Eagle Oil & Refining Co., has been transferred to the McBath service station where he will continue to sell White Eagle products.

Ben Newton, who was for 11 years with the Wichita, Kans., division of the Standard Oil Co. of Indiana, has resigned to become pastor of the Baptist church being built in Wichita.

W. L. Dinneen, Jr., member of the Dinneen Oil Co., Exeter, Nebr., on April 20 married Miss Carmen Hill, of Exeter. Mr. and Mrs. Dinneen are making their home at Exeter.



Tycos Instruments for ALL Applications

The photograph above shows *Tycos* Type P temperature regulator and diaphragm valve controlling temperatures and a *Tycos* recording thermometer recording temperatures in a gas fired still at a natural gasoline plant.

This is but one use for *Tycos* temperature instruments in the oil business. There are hundreds of others for in few other industries are the uses of heat so diversified and so important.

Tycos temperature instruments have rendered excellent service for oil operators all over the world. They have been called upon to handle every temperature requirement. It is with confidence, therefore, that we recommend these sturdy, reliable instruments for your refinery.

Our engineers will gladly demonstrate why their uniform results and low upkeep make them worthy of being made the standard in *your* plant.

Send for Catalog Part 1700 for the oil industry.

Taylor Instrument Companies

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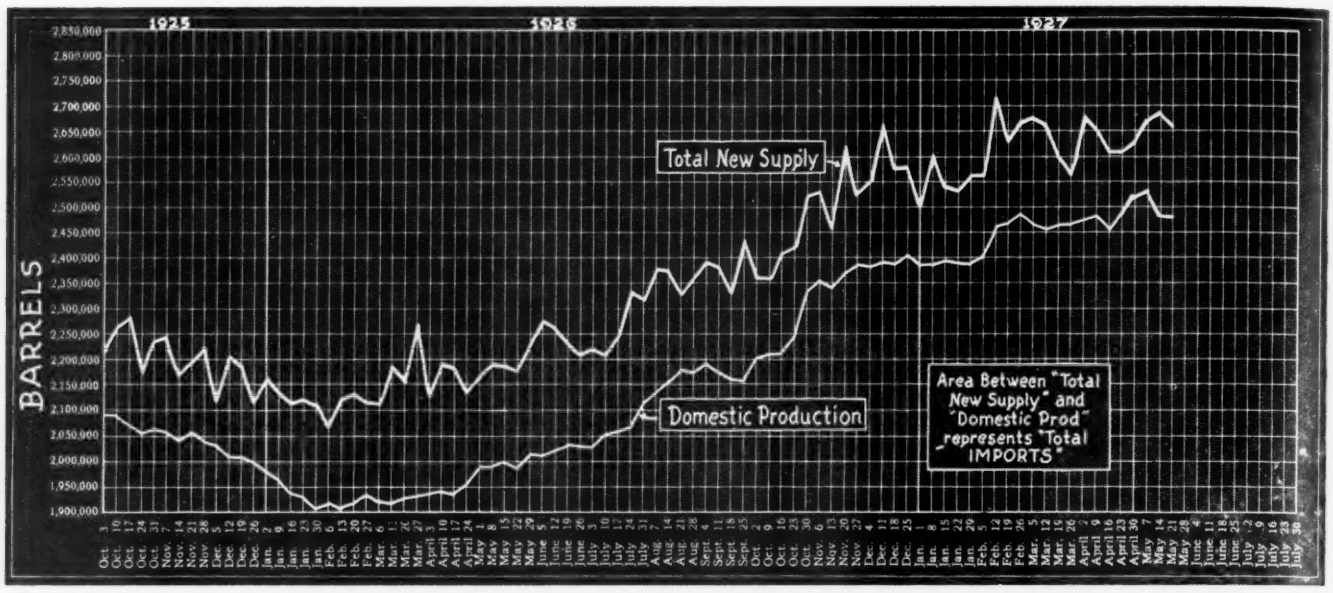
MANUFACTURING DISTRIBUTORS
IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON

Tycos Temperature Instruments

INDICATING - RECORDING - CONTROLLING

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below, as compiled by American Petroleum Institute

Production Summary

	May 21	May 14
Production east of Rockies	1,850,300	1,851,400
Decrease		1,100
Total Production in U. S.	2,478,000	2,486,700
Decrease		8,700
Crude Oil Imports	180,429	202,143
Decrease		21,714
Total Crude Supply	2,658,429	2,688,843
Decrease		30,414

OKLAHOMA

	May 21	May 14
North Braman	5,900	6,050
South Braman	3,500	3,400
Blackwell	3,800	3,800
Hubbard	7,300	7,300
Thomas	2,100	1,500
Tonkawa	23,000	22,800
Garber	15,050	15,750
Burbank	43,150	43,500
Osage, outside Burbank	33,800	33,850
Watchorn	2,400	2,400
Cushing	21,450	21,450
Yale Jennings	11,700	11,750
Davenport	3,350	3,450
Bristow-Slick	27,050	27,050
North Okmulgee	17,100	17,100
Lyons-Deaner	4,400	4,400
Stroud	1,550	1,550
Cromwell	12,750	13,000
Papoose	7,050	7,300
Wewoka	19,500	19,800
Seminole	285,850	286,650
Earlsboro	65,650	62,400
Duncan district	7,050	7,050
Graham	7,550	7,550
Fox	1,800	1,800
Healdton	14,850	14,850
Hewitt	10,100	10,100
Scholem-Alechem	14,900	14,800
Others	63,050	63,150
Total Oklahoma	736,700	735,550
Increase		1,150

KANSAS

	May 21	May 14
Greenwood County	38,500	39,100
Florence-Covert	1,800	1,800
Peabody-Elbing	3,750	3,750
Eldorado-Towanda	13,700	13,700
Augusta-Fox-Bush	4,450	4,400
Rainbow Bend	2,450	2,500
Russell	3,200	3,200
Churchill	17,850	16,650
Others	28,800	28,800
Total Kansas	114,500	113,900
Increase		600

NORTH LOUISIANA

	May 21	May 14
Homer	5,200	5,250
Haynesville	7,750	7,800
Caddo, light	9,900	9,800
Caddo, heavy	5,250	4,450
De Soto, Red River	4,100	3,850
Elm Grove	650	600
Bellevue	1,400	1,400
Cotton Valley	5,700	5,750
Urania	8,500	9,700
Total North Louisiana	48,450	48,600
Decrease		150

ARKANSAS

	May 21	May 14
El Dorado	6,250	6,250
Smackover, light	10,950	11,200
Smackover, heavy	89,450	89,250
Stephens	1,350	1,350
Nevada	1,400	1,450
Lisbon	3,850	3,950
Others	150	100
Total Arkansas	113,400	113,550
Decrease		150

Texas (Outside Gulf Coast)

	May 21	May 14
Panhandle District:		
Hutchison County	107,500	108,800
Carson County	13,600	14,450
Gray County	9,900	9,200
Wheeler County	3,050	3,000
Others	50	50
Total Panhandle	134,100	135,500
Decrease		1,400
North Texas		
Burkburnett	12,900	13,000
Electra	13,450	13,650
Iowa Park and K-M-A	3,700	3,800
Wilbarger	13,200	13,300
Archer County	30,400	29,400
Montague-Cooke	14,950	14,350
Others	850	900
Total North Texas	89,450	88,400
Increase		1,050
West Central Texas		
Stephens County	9,050	9,150
Eastland-Desdemona	7,150	7,250
Brown County	26,050	26,400
Coleman County	1,200	1,250
Callahan County	4,100	4,100
Shackelford County	11,700	11,950
Young County	8,800	8,950
Throckmorton County	3,000	3,100
Palo Pinto County	2,000	2,100
Jones County	2,500	2,650
Mitchell & Scurry Counties	3,800	3,850
Howard County	3,000	3,550
Reagan County	26,950	27,150
Crane & Upton Counties	59,650	64,650
Pecos County	13,350	9,600
Others	5,700	5,450
Total West Central Texas	188,000	191,150
Decrease		3,150
East Central Texas		
Mexia	11,200	11,350
Currie	600	600
Richland	900	900
Wortham	3,200	3,300
Corsicana-Powell	19,150	19,350
Nigger Creek	4,300	4,350
Total East Central Texas	39,350	39,850
Decrease		500
Southwest Texas		
Luling	16,750	16,900
Lytton Springs	2,150	2,150
Somerset	1,200	1,200
Laredo District	14,150	14,300
Piedras Pintas	50	50
Others	600	600
Total Southwest Texas	34,900	35,200
Decrease		300
Total Texas (Outside Gulf Coast)	485,800	490,100
Decrease		4,300

GULF COAST

	May 21	May 14
Coastal Texas		
West Columbia	10,250	10,500
Damon Mound	950	900
Big Creek	4,350	5,000
Boling	2,050	2,150
Blue Ridge	2,600	2,250
Pierce Junction	9,600	8,750
Humble	3,800	3,550
Goose Creek	8,350	8,100
South Liberty	3,700	3,550
Hull	18,300	19,950
Saratoga	1,150	1,150
Batson	1,500	1,100
Sour Lake	4,550	4,350
Spindletop	51,150	51,950
Orange County	5,250	5,550
Others	5,000	5,600
Total Coastal Texas	132,550	135,000
Decrease		2,450
Coastal Louisiana		
Vinton	5,250	5,350
Lockport	6,650	6,050
Evangeline	1,000	1,000
Edgerly	750	600
Others	1,950	2,200
Total Coastal Louisiana	15,600	15,200
Increase		400
Total Gulf Coast	148,150	150,200
Decrease		2,050

ROCKY MOUNTAIN

Wyoming

	May 21	May 14
Salt Creek	46,800	44,750
Grass Creek	2,550	2,600
Elk Basin	800	1,050
Big Muddy	2,800	2,750
Lost Soldier	3,350	3,300
Rock River	2,700	2,600

"OILWELL" HERCULES STEEL SUCKER RODS

"OILWELL"

Originated the Upset Steel Sucker Rod
Made from One Piece of Steel and Weldless

Features of
"OILWELL" Hercules Steel Sucker Rods

Free wrenching which saves labor and time, and also eliminates the freezing of threads. The end of the pin on all Hercules Rods is crowned to protect the first thread from damage and to facilitate easy starting of the joint.

Friction joints—Hercules Joints "shoulder up" readily and are easily locked with wrenches, thereby eliminating unscrewing in the well. The boxes are counterbored which keeps sand from accumulating on the joint shoulder when "setting up."

Fillet at pin base gives additional strength to pin.

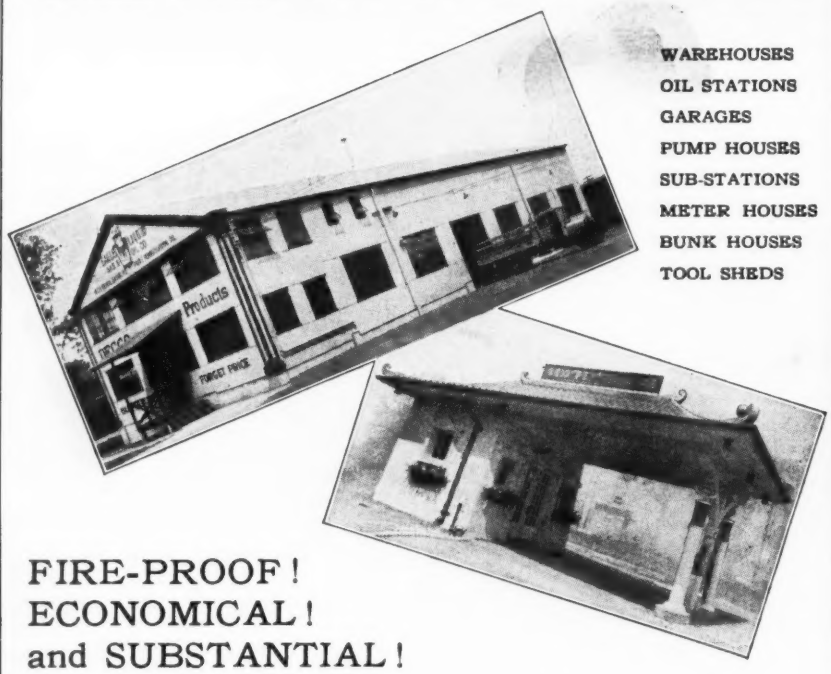
"OILWELL" Hercules Steel Sucker Rods can be furnished in two styles — box and pin, or pin and pin with couplings. They are practical in design, sturdy in construction and efficient in service. Popular sizes are carried in stock at all district points.

Inquire at any of our 100 Branches

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON
WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

STEEL BUILDINGS for EVERY PURPOSE



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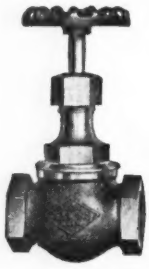

Fig. 106
Screwed, Jenkins Standard Bronze Globe Valve

Fig. 108
Screwed, Jenkins Standard Bronze Angle Valve

They stay off the sick list

Jenkins Valves have the reserve strength that renders them immune to onslaughts of hard wear which lay ordinary valves low. Each Jenkins is *built* for maximum service, not merely the average.

Only analyses proved metals are used and the design provides for extra weight at wearing parts. And to make sure each valve is thoroughly equipped to make good, Jenkins Bros. give each valve a rigid test under pressures more severe than those for which it is recommended.

Jenkins Valves are obtainable through supply houses everywhere.

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JENKINS BROS., Limited
Montreal, Canada *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

Lance Creek	550	700
Teapot Dome	1,200	350
Others	3,800	2,800
Total Wyoming	64,550	60,900
Increase		3,650

Montana

	May 21	May 14
Cat Creek	2,350	2,350
Sunburst	11,200	11,500
Others	200	200
Total Montana	13,750	14,050
Decrease		300

Colorado

Moffat (Craig)	2,000	2,000
Fort Collins	3,100	3,450
Florence	700	650
Others	1,650	1,800
Total Colorado	7,450	7,900
Decrease		450

New Mexico

Table Mesa	100	300
Artesia	1,700	1,700
Hogback	550	650
Rattlesnake	200	500
Total New Mexico	2,550	3,150
Decrease		600
Total Rocky Mountain	88,300	86,000
Increase		2,300

CALIFORNIA

Santa Fe Springs	42,000	42,000
Long Beach	94,000	93,000
Huntington Beach	75,000	74,000
Torrance	24,000	24,000
Dominguez	17,000	17,500
Rosecrans	10,000	10,500
Inglewood	36,000	36,000
Midway-Sunset	91,000	91,000
Ventura Avenue	39,500	40,100
Seal Beach	46,000	54,000
Others	153,200	*153,200
Total California	627,700	635,300
Decrease		7,600

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	115,000	113,500
Increase		1,500

* Revised.

Tulsa Building Plans Show Confidence

Staff Telegram

TULSA, May 24.—Talk of over-production of crude has not affected Tulsa's industrial activity as reflected in new building. May building permits so far amount to over $1,150,000, April permits were $853,000 an increase of 45 per cent over the same month in 1926. The total of permits issued in 1926 was $7,715,000; in 1925 it was $10,075,000. Sunday the Exchange National Bank, primarily an oil industry banking house, announced plans for a 12-story annex to the building it now occupies which will double its banking space, giving it a lobby 300 feet long.

ROCKVILLE, MO.—A line of tires and accessories has recently been added to the oil business of Willems Oil Co., here and another gasoline pump has been installed at its station, according to N. J. Willems, owner.

CHICAGO, May 18.—Sales office of Osborn Refining Co. at 35 East Wacker Drive, Chicago, were moved this week to Hammond, Ind.

CHICAGO, May 18.—Chicago office of Marland Refining Co., 208 S. LaSalle St., has been enlarged by the taking of a lease on the adjoining office space.

WE BELIEVE

In the future of the natural gasoline industry

BECAUSE

it is producing a commodity that is indispensable and that is at last being recognized for its true worth.

WE WELCOME

the Association of Natural Gasoline Manufacturers to Tulsa because as members of this organization we recognize the valuable service it is rendering to the industry through research work, educational campaigns and in other ways.

SKELLY OIL COMPANY

Tulsa, Oklahoma

One of the largest manufacturers of natural gasoline in the mid-continent field.

Refiner Saves 10 Tons of Coal a Day With Boilers in Still Flues

By Paul Truesdell
N. P. N. Staff Writer

CLEVELAND, May 23

IF the temperature of the flue gases going to the stack on every pipe still and shell still battery in every refinery in the country could be reduced by 100 degrees F. and the B.t.u.'s represented by that 100 degrees could be applied to vaporizing water, the chances are that most of the refineries that are now suffering from insufficient boiler capacity would have plenty of steam.

The refining industry the past two or three years has done a great deal toward reclaiming waste heat and putting it to work. It is now rather common practice to install steam superheaters and economizers in boiler and still flues and in other industries the use of waste heat boilers is not uncommon. So far as we have heard, the use of waste heat boilers in the oil industry is unusual.

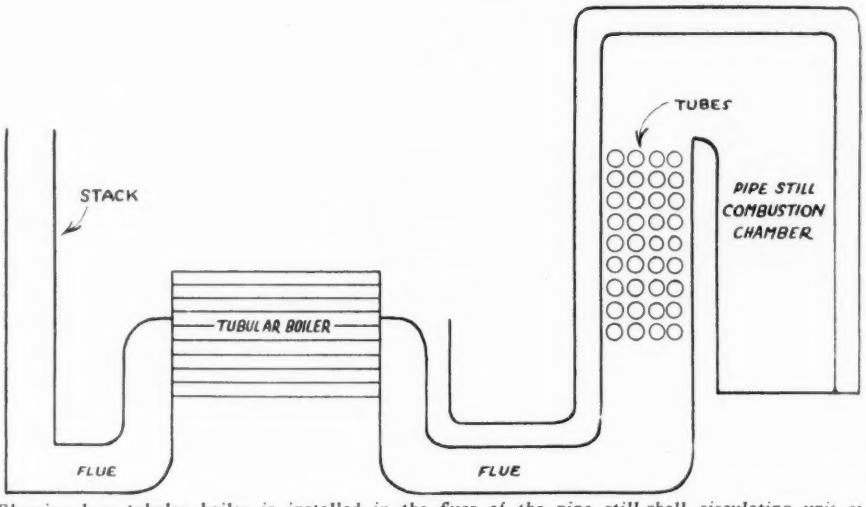
This is a story about the installation of waste heat boilers in the flues of two combination pipe and shell stills at the plant of the Emery Manufacturing Co., Bradford, Pa. These two boilers, according to Alexander Lackman, refinery manager, made it possible for the company to tide over the winter without buying new boilers to help out its inadequate steam supply. Without the waste heat boilers, Mr. Lackman says, refining operations on the scale they were carried on would have been impossible.

In order to understand the method of installation of the waste heat boilers and the kind of equipment in which they are installed, it is necessary to describe briefly the circulating shell-pipe still which is the design of Mr. Lackman. He was the first man so far as we know, to build a pipe still for the distillation of Pennsylvania crude.

HIS first still, built in 1924 was so successful that another was recently put in at the Emery plant. Since the first one was put in operation, several combination shell and pipe stills have been installed in various other Pennsylvania refineries. These differ from Mr. Lackman's and according to their designers, have many improvements as compared with his.

H. S. Bell, consulting refinery engineer of New York, has put in several plants in which the crude is heated in pipe stills, circulated through shell stills and fractionated in bubble towers.

Mr. Lackman's original circulating unit was described on page 74 of the May 27, 1925 issue of National Petroleum News. It is really a double unit consisting of two 1200-barrel shell stills with a pipe still connected to each of them. Each operates independently of the other by the batch system, making alternate runs. A cycle in the original unit is described by Mr. Lackman as follows:



Showing how tubular boiler is installed in the flues of the pipe still-shell circulating unit at the plant of the Emery Manufacturing Co., Bradford, Pa.

The 1200-barrel shell still is charged with crude and the oil burners in the furnace of the pipe still are lighted. At the same time the big rotary circulating pump is started, taking suction from the oil in the shell still and forcing it through the pipe still tubes. This pump has a capacity of 700 gallons a minute. There are 72 3½-inch tubes in the furnace and the 1200 barrels of oil makes the circuit through the pipe still in about an hour and 12 minutes. It takes about three hours to bring the oil in the system up to 150 to 160 F. at which temperature the lightest vapors begin to come off. The inlet for the oil from the pipe still into the shell still is through a six-inch line running along close to the bottom of the shell still.

THE pipe is perforated on the under side with numerous small holes so that the hot oil has to come out in small bubbles and bubble its way up through the body of the oil. This hot oil heats up the bulk of the oil and also subjects the rising bubbles to scrubbing action. There is no firing of the shell stills.

This double circulating pipe still unit displaced six crude stills of the shell type at the Emery plant and made it possible for the refinery to run 45,000 to 48,000 barrels of crude a month as against a maximum of 34,000 barrels before it was installed.

The results obtained with the first unit led to the building of the second double installation. This is similar in general operating method and in design to the first unit, except that it is larger and is equipped with the waste heat boilers. The stills in the new unit are 16 feet in diameter and 52 feet long with a capacity of 2000 barrels each. It takes 30 to 32 hours to run down a batch of crude, taking off the gasoline, heavy naphtha and kerosene cut, which total about 46 to 48 per cent of the crude.

ONE of the most serious difficulties at the Emery plant was lack of boiler capacity. When Mr. Lackman began planning the new circulating tube still, he gave a lot of thought at the same time to a method of making the fuel used in heating the oil do double duty in generating steam as well.

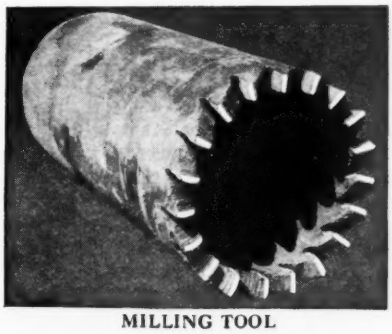
Benjamin N. Broido, formerly chief engineer of the Superheater Co., now

An Article on Filtering
Next Week

Another article by Paul Truesdell in the June 1 issue will describe in detail a new application of contact filtering as it has been worked out in a refinery. It seems likely to many refinery technologists that the method described, or at least a modification of it, will become general in many plants where lubricants are manufactured.

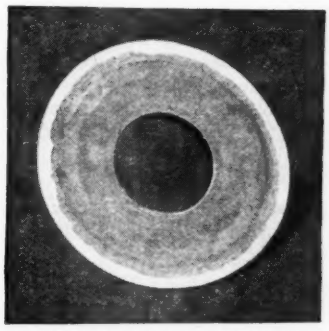
Contact filtering is a very interesting subject from all angles, particularly now when the development of better clay burning equipment and clay handling methods put the percolating filtering on a basis of higher efficiency than ever before.

WHAT IS A STELLITED TOOL?



MILLING TOOL

FISH TAIL BIT



RING FOR ROTARY DISC BIT

You may have asked this question.
Here is an answer.

HAYNES STELLITE is not an untried, fly-by-night metal. Stellite Cutting Tools have been standard equipment in metal working plants for years on jobs where extreme abrasion resistance is necessary.

Stellite is a cast metal and cannot be formed or shaped except by grinding.

The Stelliting process, which means flowing a thin coating of Stellite on a wearing surface, was, therefore, developed for the purpose of obtaining an easily worked tool plus the advantage of a hard wearing surface or cutting edge.

That's why oil men became interested in this metal. The performance of Stellited Bits has justified their interest, for Stellited Bits will average twice as much hole per run.

You may not know how Haynes Stellite is being used. In succeeding advertisements we shall discuss the proper methods of making Stellited Tools and their performance in actual operation.

If you haven't tried Stellited Tools, get in touch with our nearest District Office for a demonstration.

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

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DETROIT—4-240 Gen'l Motors Bldg.
HOUSTON—709 Stewart Building
LOS ANGELES—1310 Santee Street
NEW YORK—30 East 42d Street
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Stelliting with

HAYNES STELLITE

dead, had written a series of articles on the possibilities of putting water tubes in pipe stills and thus generating steam with the same fuel used for distilling oil. These articles were published a few months ago in NATIONAL PETROLEUM NEWS.

Whether Mr. Lackman read these articles or not I don't know but at any rate he began study along the same line and then the idea of putting regular boilers in the pipe still flues occurred to him. He bethought him of two old tubular boilers that were relics of a plant for the manufacture of oxalic acid that was formerly operated by the elder Lewis Emery.

He looked these boilers over and found them in good shape. He decided to install them in the flues. The accompanying drawing shows how they were installed.

Water is fed to the boilers by an automatic feed water regulator and is taken from the condenser boxes, so that it goes into the boilers at 160 to 180 F. In a great many refineries where the condenser water is taken from river or creek and contains a high percentage of solids, feeding the boilers from the condenser boxes is bad practice because the concentration of solids of such water is high, due to the evaporation of the water in the boxes. However, there is no such difficulty at the Emery plant. The water comes from wells and contains practically no scale-forming material.

THE boilers are so set that the products of combustion pass through the fire tubes, and the boiler housing is so well insulated that the outside brickwork feels hardly warm to the touch.

The result of the installation is that very high efficiency is realized from the fuel used. Each boiler generates 150 horsepower when operating and according to Mr. Lackman's estimate, saves 10 tons of coal a day, that being the amount necessary to generate a like amount of steam. The maximum temperature of the flue gases in the base of the stack, Mr. Lackman says, is 386 F., and is often well below that figure.

Not only does the waste heat boiler installation save a considerable amount of fuel but it postponed for many months the necessity for the heavy capital expenditure for a new boiler. However, the company is now getting ready to install a strictly modern 800-horsepower boiler, automatically fed and regulated which is expected to run for long periods at 200 per cent of rating. This will be one of the first if not the first refinery boiler, outside possibly of the very large plants, to be fired with powdered coal.

What the possibilities are for similar installations in other refineries with pipe stills, or its application to batteries of shell stills would seem to be a matter for study and each plant would present its peculiar problems. Mr. Lackman was fortunate of course, in having at hand the two second hand boilers. These presumably had long ago been charged off and so they cost him nothing. He estimates that the entire cost of putting the boilers was not more than $1,200.

In such a case, he is in position to realize handsomely on the investment. It is likely that in some cases, where new boilers are put in at a refinery, replacing old tubular units, the latter might profitably be installed in the flues of still batteries to serve as auxiliaries, working for nothing and boarding themselves, so to speak. It might be worth while in some cases where the need for more steam is acute and where the capital necessary for new boilers is not available, to look over the second hand dealers' yards and buy old boilers for the purpose.

Federal Trade Commission to Hear Virginia Marketing Fight

CLEVELAND, May 21

CALLING of an informal public conference at Richmond May 25 by the Federal Trade Commission is the latest move in the long fight Independent oil marketers in Virginia are making against what they term the unfair trade practices of major marketing companies.

J. B. Belk, Albemarle Oil & Gas Co., Charlottesville, president of the Virginia Independent Oil Men's Association, says the trade commission's agent will consider various methods of competition existing in the sale of gasoline, including the so-called factorage agreements, discounts from tank wagon prices, payments of fixed sums per month to retailers under the form of rentals, and payments of expenses encurred in installing equipment in retailers' places of business.

Independent dealers in Virginia launched their active protest against the marketing practices of the big companies—Standard of New Jersey and The Texas Co., particularly—with an injunction suit in state court brought by 10 dealers in Albemarle county. This action, under a new anti-discrimination law, called upon the Standard and The Texas Co. to maintain the usual differentials between the tank car and tank wagon price, and between the tank wagon and service station price, and to discontinue giving rebates.

The form of rebate most discussed in the taking of depositions in this suit was the "factorage" agreement of the Standard, by which, according to the statement of Mr. Belk, that company made an arrangement with its retail dealers by which they sold gasoline at the Standard's open price and were given 2 cents rebate for every gallon sold.

This suit was withdrawn after the taking of a great many depositions, upon the suggestion of attorneys for the big companies that the big companies were willing to arbitrate their marketing practices. The opinion of the state attorney general had been secured, to the effect that the state law would allow agreement among the companies as to fair practices to be followed.

The Virginia Independent Oil Men's Association called a special meeting and appointed a committee to take the matter up with the big companies. This committee consisted of President Belk; C. M. Little, Little Oil Co., Richmond; Overton Dennis and J. B. Blackburn. This committee went to New York and took up the matter of trade practices in Virginia with the Standard and Sinclair, and The Texas Co. The two former were agreeable to stopping debateable practices, acording to Mr. Belk, but The Texas Co. refused to discuss them, insisting their practices were legal in every respect.

According to President Belk the Independent dealers will continue their fight for fair marketing practices regardless of the outcome of the Federal Trade Commission hearing May 25.

California Red Crown Carries Lindbergh

CLEVELAND, May 24. — NATIONAL PETROLEUM NEWS has received the following telegram from the Standard Oil Co. of California, San Francisco:

"You may be interested to know Lindbergh used Red Crown aviation gasoline manufactured at this company's Richmond refinery. He purchased it from his headquarters in San Diego prior to his hop to St. Louis. His transcontinental flight was made with the same product. The company has received the following telegram from H. H. Knight of St. Louis, one of Lindbergh's principal backers.

'Congratulations on important part you played in the successful flight of Capt. Lindbergh in the Spirit of St. Louis.'

"We replied: 'We are very grateful to you for your kind message concerning the part we played in Lindbergh's great achievement. Needless to say we are proud of the fact that Red Crown gasoline was used but the laurels belong to Lindbergh and to his sponsors who had such great faith in him.'"

Celebrate Doherty's Birthday

TULSA, May 21.—Employees of the Empire Refineries Inc., and the Cities Service Oil Co. at Tulsa, celebrated the 57th birthday of Henry L. Doherty, head of the two companies, with a picnic at Mohawk park on May 14.

A barbecue dinner followed a series of athletic events and other entertainment. H. H. Elder was in charge of athletics, N. R. Thomasson of the commissary, L. L. Rush of entertainment and Brad Thomas of transportation.

Straight Thinking and Hard Work Needed To Place Natural Gasoline on Its Feet

By E. L. Peck, Manager Empire Gasoline Co.
and President of the Association of Natural Gasoline Manufacturers

President's Annual Address Delivered Before Sixth Annual Convention, The Association of Natural Gasoline Manufacturers, Tulsa, May 24

THE Association of Natural Gasoline Manufacturers is entering its seventh year as an organized effort to improve the general conditions of the branch of the petroleum industry it represents. In the six years of its existence, it has accomplished much.

A number of important and pretentious undertakings have been launched during the past year by the association, chief of which were the research and educational campaign, the revision of the specifications, the tests to determine the best method for ascertaining the proper gravity of gas and the initiation of a movement through a committee to prevent the present wasteful and costly practice of unnecessary venting of tank cars at destination.

The research and educational campaign may well be placed at the head of the year's activities. The inauguration of this movement was a milestone in the progress of our branch of the oil industry. I want to commend the donors to this fund, both members and non-members, for their generosity in making this research work possible, and to assure them that, a substantial foundation has been laid which cannot fail to grow to a praiseworthy monument to the sound purposes of this branch of the industry and return many fold the expense and energy envolved.

FROM time to time there has been a real need for revision of our specifications. Ours is an ever-changing industry and, while it is not desirable to change specifications with frequency, the association has never held back when the changes recommended were of sufficient importance to warrant their revision. The specifications committee has spent considerable time recently in considering recommendations of some of our members looking for a change in the specifications.

The gas testing committee deserves special mention. For two years it has been busy on vital problems; first, the determination of gasoline content of natural gas and, second, the best method of determining gravities of natural gas.

The first series of tests covered a period of approximately one year, the committee's findings and recommendations being adopted by the board of directors at our last convention. For the better part of the year 1926-1927, it has been busy on the gravity question.

The practice of venting natural gasoline tank cars at destination for an excessive length of time is an expensive one to our industry. Thousands of dollars are wasted each year, the entire cost being borne by the manufacturer. A committee recently appointed to attempt to remedy this condition has met, and an interesting presentation as to why this bad practice should be done away with will be presented by chairman Emby Kaye.

Another interesting and valuable feature of the year's work was the presentation to the Interstate Commerce Commission of facts pertaining to the lessening of the hazards involved in the shipping of natural gasoline. Figures were presented which showed a remarkable decrease in the five years, 1921-1926, when compared to the five-year period, 1915-1920. It is also gratifying to know that in a hearing before the Interstate Commerce Commission, in which several of our members endeavored to secure a lower rate on natural gasoline to eastern seaboard, neither refiners nor railroads opposed the petition. Several beneficial freight rate reductions have been obtained during the past year and continued efforts along this line will undoubtedly result in additional betterments.

IT always falls to the lot of the president in his annual address to review the conditions of the past year and to forecast the future. With all due respect to the ability of my predecessors in this position, I am sure no harder task was theirs than an attempt on my part to prophesy what the year of 1927 will bring forth. Certainly no industry faced a brighter future than did ours at the time of our 1926 meeting.

Grade "A" was selling at 10¾ cents and the demand was good. While the quotations in midsummer declined to some extent, September saw an advance to 10½ cents and the outlook was favorable. Contrast those prices with the present market. "Read 'em and weep." A well-known saying is "Trade follows the flag." It may well be said that natural gasoline follows the crude.

Certainly the over-production of crude oil is largely responsible for the over-production of natural gasoline facing us at this time. We have seen our production grow from 2,500,000 gallons, several years ago, to almost 4,500,000 gallons today and this does not include the vapor recovery gasoline used at refineries.

During the past 12 months, as shown by the most recent figures of the U. S. Department of Commerce, the production of motor fuel by refiners has increased approximately 17½ per cent. During the same period of time the production of natural gasoline has increased approximately 23 per cent which indicates that one quarter of a million gallons per day has been produced above the normal requirements of refiners as measured by past experience.

A PORTION of this over-production has found new markets, attracted partly by the very low prevailing market prices, and partly by a better understanding on the part of consumers generally of the economic uses of natural gasoline. The major relief of the future will undoubtedly result from the broadening of markets and every member of the industry must do his share to bring about the necessary result.

Our markets are rather fluctuating as to demand and further relief would be afforded if more ample storage capacity, both as to tankage and finance, was made available. Without doubt the natural gasoline industry is lagging considerably behind the other branches of the petroleum industry in providing adequate storage facilities for carrying over excess production due to seasonal slumps and when demand temporarily falls below normal. It is evident that the volume of such additional storage would not be excessive when the relatively small volume of production, six to eight days supply, even under our worst condition is taken into account.

It is doubtful if the industry ever saw a worse condition than that with which it has been confronted this year. Selling prices have been far below the cost of manufacture, while operating expenses, due to increasing gas costs, increased producer service requirements, depletion of gas reserves, obsolesence of plant equipment and many other factors, continue at normal levels or increase to higher ones. We are now passing through a period which calls for a stout heart and a long purse, but do not fail to recognize that during such a period is the opportune time to apply strenuous treatment for the chronic ills of the industry as well as for the minor and temporary ailments.

ALL of the ills of the natural gasoline industry do not fall in the uncontrollable class. I refer to the unwholesome and unnecessary competition which has existed within our industry during the past few years, especially in the new and larger pools. The elimination of competition, at the expense of stripping a project of all chances for a

legitimate profit therefrom, is certainly of no benefit to the participating companies, and does permanently injure our business by the establishment of unfair and uneconomic requirements on the remainder of the industry.

We will probably always be troubled to some extent by the new and inexperienced operator and the promoter who either does not know or is heedless of the vast difference between the securing of a block of inflated casinghead gas contracts, and the later operation of a gasoline plant, under the terms of those contracts, which results in a reasonable profit.

There is however, no possible excuse for experienced natural gasoline manufacturers to continue to build plants under conditions which are almost certain to result in losses. A smaller number of profitable projects is far more desirable, both for the individual company and the industry as a whole, than 100 per cent utilization of available casinghead gas under terms which even the novice should be able to analyze and classify as hopeless.

Over a period of years the schedule of prices paid for casinghead have remained more or less uniform but more recently there has been an upward tendency which certainly is not justified. Furthermore, under other clauses of present day contracts, usually spoken of lightly as covering the usual items of service rendered by a gasoline manufacturer for the casinghead gas producer, there has been a decided tendency to increase the burden without corresponding opportunity for compensation.

I REFER to such obligations as; utilization of a large percentage or all of the flush gas supply regardless of the method of delivery or gas contamination due to various causes; the disregard of probable life of the supply; the failure to consider the expense of residue gas requirements for operation, development, pressure restoration and artificial flowing and vacuum application, all of which obligations are held to be prior to and regardless of the economics of the gasoline manufacturers side of the picture.

The time is here when the schedule price paid for casinghead gas ceases to be the all important factor, and more attention must be given to the evaluation of the various services rendered by the manufacturer for the producer. These services are not now fully recognized by the average producer, either in the light of additional expense to the manufacturer, or as the truly sizable saving in expense to himself which results therefrom. The burden of proof is on the manufacturer if any relief is to be expected.

Recent efforts of the industry have been directed toward broadening of the markets for natural gasoline by research and publicity as well as by improvement in the quality of the product in various ways, the principal one of which is by elimination of the more volatile fractions. There is a limit however to improvement in this direction, so long as arbitrary test methods are used to determine the price of casinghead gas. A more equitable and satisfactory method, which is already in use to some extent, is to base the price of casinghead gas solely on the price and volume of the finished product, thereby making it possible to vary the process of manufacture to any extent necessary to produce the product for which there exists the most profitable market. To those who have not given serious thought to this basis of purchase, I recommend careful analysis.

It is with a great deal of pleasure I direct your attention to the form of entertainment which will be presented by our associate members at this convention. It has long been recognized by executives of member companies, as well as equipment members themselves, that some types of hotel-room entertainment is not desirable from several points of view.

With the idea of endeavoring to provide an acceptable substitute, a number of these associate members have grouped themselves into a large committee to furnish lunch and entertainment throughout this meeting. It is to be hoped the experiment will be an unqualified success and that this association may establish a precedent this year which will be a standard for all future conventions of this organization.

IN recognition of this effort and service, I wish to commend to you for consideration when needing equipment of various kinds, the associate members of this association. Many have been members for some years, while a number have only recently affiliated themselves with us. Both the old and the new, we wish to thank for your support and trust that your membership will be to our mutual advantage.

I want to especially welcome the distinguished delegation from the California Natural Gasoline Association. You gentlemen have come a long way to attend this meeting. I do not know whether it is because misery loves company or because, with the prices for your product beyond help, you thought it would be a good time to take a trip, but for whatever reason, I want to assure you, in the name of the Association of Natural Gasoline Manufacturers, that you are most heartily welcome.

We are glad to see you, glad to have you with us, and we want you to take part in our discussions freely. We know we can learn more about natural gasoline from your practices and experiences and we hope you will secure enough from this meeting to have justified your attendance.

This convention marks the end of my stewardship as the presiding officer of this association. Two years ago you honored me with the presidency and saw fit to invest me with the same honor last year. In those two years I have had splendid cooperation from the other officers, directors and members of the organization, for which I extend my grateful thanks. The past has been a pleasant one. I bespeak the same courteous treatment to the incoming president, officers and directors for the ensuing year.

In conclusion, I wish to urge on every member, the necessity for building up the association from a membership standpoint. The coming year appears to be one in which the united strength of the natural gasoline industry is going to be needed if our product is to hold its place in the petroleum structure. It goes without saying that our association has accomplished much; it has demonstrated many times its value to the industry. There is still much to be accomplished and a large powerful organization can do more than a small one, therefore, I suggest that each member constitute himself a membership committee of one and endeavor to impress on those concerns not now members the necessity for cooperation during the coming year, and convince them that greater results can be accomplished through united strength in the Association than through individual effort.

The natural gasoline industry is a basic one. While conditions are not at the best and there does not seem to be an immediate remedy at hand, I still believe in the future of our product and that a solution will be found. To that end, therefore, we must think straight and work hard and the future will show that the money, the brains and the effort that have been put into the natural gasoline industry will not have been in vain.

Canon Succeeds Benner With Keen & Woolf

Staff Special

HOUSTON, May 20.—The resignation of R. E. Benner as sales manager of the Keen & Woolf Oil Co., operating a lubricant refinery on the Houston ship channel, has been followed by announcement that he will be succeeded by Horace Canon, formerly sales manager of the Caddo Central Oil Refining Corp., at Shreveport, and more recently a Tulsa marketer.

Mr. Benner's future plans have not been announced.

Both Mr. Benner and Mr. Canon are widely known in the refinery sales division of the industry.

Michigan Jobbers Meet In Mackinac Again

Staff Special

CHICAGO, May 21.—Michigan Independent Oil Men's Association will hold its annual summer frolic in Mackinac Island again this year. The dates are July 14 and 15. *Flash Points*, the official organ of the Michiganders, announced the meeting in its issue of May 15—two months in advance. James A. Gilmore, secretary of the American Oil Men's Association has threatened to organize a boat trip from Chicago to Mackinac for the convenience and pleasure of local oil men.

Ordinary Tests Not Enough in Selecting Lubricants for Gasoline Plants

By O. S. Wyatt, F. R. Staley and E. R. Lederer
Texas Pacific Coal & Oil Co., Fort Worth

Read Before Sixth Annual Convention, The Association of Natural Gasoline Manufacturers, Tulsa, May 25

EFFICIENT lubrication is as essential for good and economical operation in natural gasoline plants as in any other industry which depends on the uninterrupted, efficient and low cost operation of its machinery.

The last few years have brought the importance of good lubrication more and more to the foreground. The former practice that any lubricating oil was satisfactory as long as it met certain tests and was cheap, has been discarded.

Refinery concerns, which expect to stay in the market, sell their oils today on quality and performance, rather than on price; their trained lubricating engineers make a careful and thorough study of each individual plant and engine, use scientific instruments and methods to check the operations of each piece of machinery and make—in cooperation with well equipped refinery laboratories—a complete survey of a plant before they recommend the most suitable oil for the service, and guesswork is, therefore, eliminated.

Such reliable concerns give now the same service on their lubricating oils as large manufacturers of motors, pumps, compressors and other machinery, furnish to protect their products and their reputation.

Lubricating oils are made at present from many different crudes and by widely different refining methods; only an experienced engineer is capable to recommend the best oil for a given machine and for the particular conditions under which it is operated.

After the correct oil is found for a given machine, it is necessary that the new supply will run uniform and as nearly constant and economical in its properties at all times; when a lubricator is set for a satisfactory oil feed and a new supply of oil is received, and it varies in its properties from the previous oil used, the lubricator will feed too fast and waste oil, or feed too slow and allow the bearings to run hot. It is, therefore, important that the refiner supplies a product that is always uniform within specified ranges.

Gas engine lubrication deposits may be found on the valves, cylinders and piston rings of the combustion cylinder. They may be formed by dirt and dust from the air, incomplete combustion, over lubrication or an inferior grade of oil, containing impurities or having a high carbon content.

Thomsen states that the frictional losses in a medium size gas engine range from 15 to 30 per cent, and in a large one from 10 to 20 per cent of the rated horsepower; this loss is constant and independent of the actual engine load. It is easy to waste 5 to 10 per cent of the engine power by unsuitable lubricating oils. Fresh oil only should be used for piston lubrication.

Waste oil from bearings should be collected and if restored and purified in a good filter, can be used again on bearings.

THE selection of the proper lubricant for a given machine is very important and the customary routine tests to determine flash, fire, viscosity, etc., are not sufficient. Viscosity, of course, is in a certain way a measure for the lubricating value of an oil; however, oils of the same viscosity at a given temperature, but made from different crudes, might differ in lubricating value and efficiency in the same engine.

Other tests are necessary to make sure an oil will suit local and individual operating conditions, like carbon test, volatility, heat test, emulsion test, acidity, etc.

Complicated mechanical apparatus has been devised for mechanical testing of lubricants, in order to match or approach actual operating conditions under which the oil has to stand up.

There are four principal classes of lubrication encountered in natural gasoline plants, i.e.,

1—Power cylinder lubrication of internal combustion engines.

2—Crank case lubrication.

3—Gas compressor cylinder lubrication.

4—Lubrication of auxiliaries such as pumping, equipment, electric motors, generators, etc.

In power cylinder lubrication we get almost entirely away from the fuel complex because natural gas is universally used for fuel. Our main problem here is selecting an oil most suitable for the type of engine in use, its mechanical condition, the load factor under which it is working and its cooling system conditions. There is such an enormous variation in these four conditions just mentioned that each plant must be carefully studied and its individual recommendation worked out.

For instance, in a two-cycle engine there is a working stroke *every* revolution, whereas in a four-cycle engine there is a working stroke *every other* revolution; therefore, the rate of heat-transfer from the inside of the cylinder to the cooling water must be twice as rapid in a two-cylce as in a four-cycle engine to maintain the same piston, ring and internal cylinder wall temperature.

Also, if there is no cooling water treating plant and the cooling water is hard and scales badly, this scale will cut down the rate of heat transfer resulting in higher cylinder temperatures and frequently necessitate the use of a heavier oil than would be necessary if soft water or treated water was used. If cylinders, pistons and rings are badly worn, a heavier oil must be used to give a better seal, also (in case of vertical engines) to cushion the piston slap.

IN certain makes and types of two-cycle engines, water in the form of vapor is injected with the fuel charge in an effort to retard the burning rate of the fuel and obtain a steam-expansion effect, also to reduce the hammer-blow effect of the explosion. Where this water-injection is used better lubrication results can sometimes be obtained by using an oil compounded with about 5 per cent of acidless tallow; this for the same reason that we compound steam cylinder oils.

The carbon residue of internal combustion cylinder oils should be *as low as possible*. Experience has proven that the lightest bodied oil which will maintain a constant lubricating film under the operating conditions is the best and most economical to use. If too heavy an oil is used excessive "carbon" deposits under rings, on piston and cylinder heads, and (in case of four-cylinder engines) on valves, will be formed and the engine will run hotter.

In crankcase and bearing lubrication also the lightest oil which will maintain the proper lubricating film should be used, for increase in viscosity means increase in fluid friction and any increase in either fluid or solid friction means loss of power and increase in heat generation, which is just what we want to avoid.

Too much clearance in crosshead and crankpin bearings is almost as great an evil as to little clearance, for anyone can demonstrate that a horseshoe can be heated red hot by laying it on an anvil and striking it rapidly with a hammer.

HEAVY duty engine crankcases should be equipped with continuous circulating, filteration and cooling systems. Such systems will pay

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dividends where large quantities of oil are used.

Air or gas compressors should be lubricated with a light or medium bodied oil, fed sparingly, except where excessively wet gas is being handled. Generally, we find that single and two-stage compressors handling gas from the gathering lines to the wells can be satisfactorily lubricated with a good quality paraffin base oil with a viscosity of 300 to 350 seconds at 100° F.

We have found some two-stage compressors handling vapors from the weathering tanks and recovery plants discharging at high pressure, that had to have a 750 vis. oil fed 12 to 18 drops per minute per cylinder. Ordinarily 3 to 7 drops per minute per cylinder will do the work.

Mechanical forced-feed lubrication *only* should be used for power and compressor cylinders.

THE proper crank case oil level should be determined and rigidly maintained. Too much oil in the crank case will shorten the life of the oil; too little will surely burn the bearings up.

Where high speed auxiliaries such as turbine or motor driven centrifugal pumps are used, 200 vis. oil will usually give a lower bearing temperature than heavier oils, provided, of course, that bearings are in line and in good condition.

As previously stated, no set rules can be laid down as to just what oils will satisfactorily lubricate any certain make of engine, because of varying operating, mechanical and load conditions, but take a new engine of the usual type, properly built, installed, cooled and properly operated and maintained, a good quality paraffin base oil of 300 to 350 secs. vis. or asphalt base oil of 500 to 550 secs. vis. properly fed should give good results. The viscosity of these two oils mentioned will be practically the same at 210° F.

California Shipments Show Large Increase

LOS ANGELES, May 21.—Shipments of petroleum products out of Los Angeles Harbor during week ending May 14, to points outside of Pacific Coast trade territory, exceeded any week during the past three months, except for the week ending April 2.

Total movement last week was 1,838,067 barrels, all products, or a daily average of 262,581 barrels. The movement included 353,405 barrels of crude, 1,005,956 barrels of fuel, 372,715 barrels of gasoline, 59,243 barrels of kerosene and 46,748 barrels of Diesel. Of the crude shipped, 282,507 barrels went to East Coast and one cargo to Pacific foreign. Pacific foreign drew 466,345 barrels of fuel while 444,976 barrels went to Atlantic domestic.

Federal Receivers Manage Two Oil Companies

Staff Special

LOS ANGELES, May 21.—Federal receivers of the Julian Petroleum Corp. have also been named receivers for the California Eastern Oil Co., which is to take over the Julian holdings, and as a result of the audit of the Julian Petroleum books, it was announced this week that more than 3,600,000 shares of preferred stock had been issued, against an authorized 600,000 shares. There was also an over issue of common stock.

The over issue of Julian Petroleum stock is now being investigated by state, county, federal and postal authorities. The county grand jury has returned a true bill against an unnamed man, not yet under arrest, and this man must give bond to the amount of $250,000, if and when arrested. Reports are current that other indictments are to be returned.

C. C. Julian, who organized the company, but who has had nothing to do with the company for two years, charged over his broadcasting station that bankers had helped to wreck the corporation and he named "many names" in his radio talk of about one hour.

It appears that socalled "Julian Petroleum Scandal" is to rock financial circles in San Francisco and Los Angeles.

At the time the California Eastern was formed to take over the Julian Petroleum Corporation and affiliated companies, it was agreed that the net assets of the Julian Petroleum Corporation were valued at $18,000,000. The corporation operates refineries, drills wells, operates pipe lines and has a fairly large marketing organization.

Charges and counter-charges flying about with reference to the case are so charged with "dynamite" that few men of affairs are willing to discuss the case.

Those who are expected to lose considerable money are not all poor people by any means. Many men of affairs stand to be heavy losers.

A number of prominent men are officials in the California Eastern, but no charges have been made as to management of this company. This company had been formed to take over the assets of the Julian organization, and it had been stipulated that stock would be exchanged through the transfer, it being stipulated that only 600,000 shares of preferred and the same amount of common figured in the deal, and nothing was known at the time of the closing of the deal of any over issue.

HICKMAN, NEBR.—The new filling station of the Hickman Oil Co. on Cornhusker highway had its formal opening on May 21. The station is in charge of John Allder and Walter Stevens, of Sprague, Neb., according to C. J. Stover, manager.

Curb pumps have been installed by the company at Holland and Hickman and a pump at a garage at Sprague.

Vapor Recovery Plant Product Big Factor In Natural Gasoline Market

By J. C. Chatfield
N. P. N. Staff Writer

(Read before Sixth Annual Convention Association of Natural Gasoline Manufacturers, Tulsa, May 24.)

THE extent to which the natural gasoline market is affected by the output of a similar product from vapor recovery plants at refineries is brought out for the first time in the accompanying address of J. C. Chatfield, National Petroleum News staff writer, presented before the annual meeting of the Association of Natural Gasoline Manufacturers at Tulsa May 23. Mr. Chatfield appeared on the program at the request of the program committee of the association, who desired a statistical analysis of market conditions.

THE title of this paper, "Economics of the Natural Gasoline Industry" might have been expected to keep most of you gentlemen away this afternoon. Any discussion of economics you might consider as dry gas and hence not a product suitable for absorption by a group of gasoline manufacturers.

You know that usually it is the old maid who tells all there is to know about raising babies. The old maids are more free with their advice than the grandmothers who have had real babies.

In this case your program committee asked a newspaper man who has never made a gallon of gasoline in his life to tell you just what is wrong with the natural gasoline industry.

My personal opinion about the natural gasoline industry is that it is too efficient and too energetic for its own good.

We hear a great deal in the petroleum industry these days about conservation. The President has appointed a board which bears that long word as part of its highsounding title. The Federal Oil Conservation Board will be negligent in its duty if it does not order a medal struck off in honor of the natural gasoline industry.

Any industry deserves a medal which loads plants on trucks and moves them about on the heels of wildcatters so that when, as and if a well comes in, the gas may be processed without the possibility of any waste. The medal ought to be of pure gold when such plants are set up in the face of a certain deficit for those particular plants themselves and an even greater deficit for all other plants already in operation.

YOU gentlemen are more aware than anyone else possibly can be of the remarkable expansion of your industry during the past few years, which has brought about the present overproduction. You know of the tremendous gas volumes developed in the Panhandle fields of Texas and of the rich gas in Seminole and elsewhere which you have felt it necessary to process in your plants.

You are to a certain extent the victims of misfortune. It is certainly not your fault that the Panhandle or Seminole fields were discovered. It isn't your fault that U. S. Motor gasoline is selling at 6½ cents per gallon so that even if your product brought a moderate premium over the material with which it is blended you would still find it necessary to lay in a supply of red ink for your bookkeepers to use in jotting down your profits.

If U. S. Motor gasoline were bringing 10 to 12 cents per gallon there would be much less weeping if you had to sell your product at 1 to 2 cents under that level. When you must go 1 to 2 cents below present refinery gasoline prices unfortunately your raw material and manufacturing costs cannot be scaled down sufficiently to leave you an operating margin and, unfortunately again, you cannot shut down temporarily.

The refining industry has been accused often the past few years of expanding too rapidly and making too much gasoline. Like yourselves the refiners have been too energetic for their own good.

In checking over Government production figures we find that, in spite of the tremendous rate of increase in the production of refinery gasoline, the natural gasoline industry has increased its production at an even faster rate. Let me call your attention to the accompanying chart, Fig. 1, which is intended to show the relative increases in production of refinery gasoline and natural gasoline during the past nine years.

In preparing this chart the inequalities of increase from year to year have been ignored. Merely the trend of increase in the supply of the two commodities has been indicated. This chart shows that the production of refinery gasoline in 1926 was 273 per cent greater than the production of refinery gasoline in 1918. The production of natural gasoline was 381 per cent greater in 1926 than in 1918.

THIS, of course, is the primary reason why natural gasoline is as cheap as it is today in comparison with refinery gasoline. Production is a little ahead of demand and has been so for nearly two years.

There is another factor which appears to be highly important in its effect upon the demand for natural gasoline. Perhaps you will remember the discussion among refiners about vapor recovery plants back in 1925 when a shortage of natural gasoline developed. As a result of the shortage and consequent high prices refiners began installing plants very similar to your own for the purpose of processing uncondensed still gases.

Undoubtedly you have known that refiners were installing these auxiliary plants to reduce their losses and produce a high gravity blending material similar in many respects to the commodity pro-

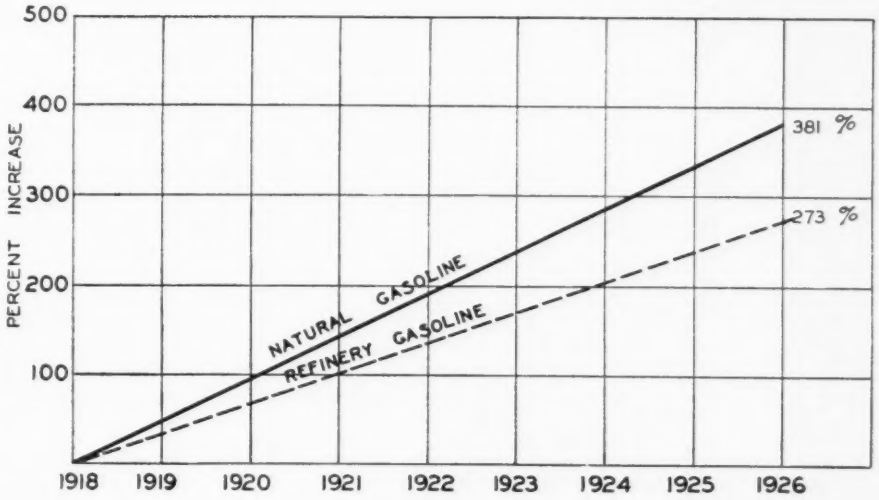
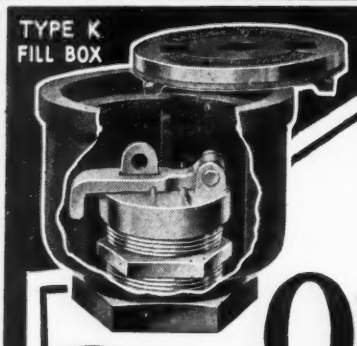
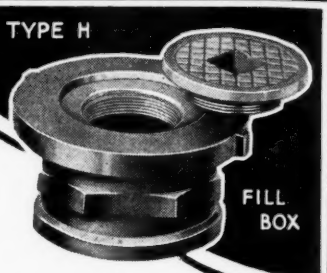
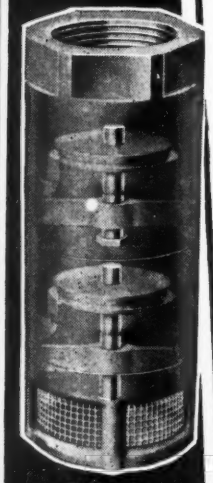


Fig. 1—Comparison of lines of increase of production of refinery and natural gasoline

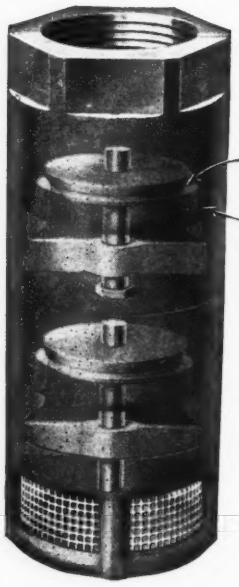




COMPLETE OIL EQUIPMENT

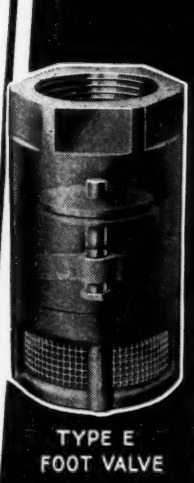


Over 100,000 in Use



Bevel Seats and Discs

Sediment Chamber



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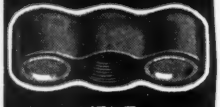

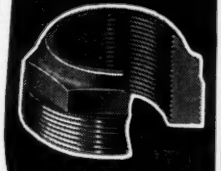

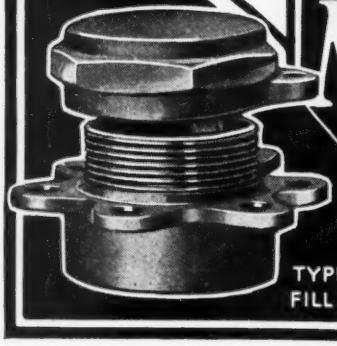

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duced at natural gasoline plants. In some cases probably you have been consulted by refiners as to the type of equipment to install. Some of you may have helped your refiner customers design and install these little natural gasoline plants.

YOU have known about these plants going in and have known that one has produced a thousand gallons a day, another 1500 gallons per day. I doubt that many of you realized just how much this vapor recovery plant gasoline amounts to when all these plants are taken into the picture.

In order to obtain information regarding these vapor recovery plants a questionnaire was sent to every refiner in the United States. Replies were received from 136 companies operating 183 refineries in all parts of the country with a combined charging capacity of 1,727,520 barrels of crude per day. This group of refineries represents 60.95 per cent of the active refining capacity of the country on the basis of the latest report of the U. S. Bureau of Mines compiled on Jan. 1, 1927.

At the time this questionnaire was circulated 57 companies with a refining capacity of 1,410,000 barrels per day reported that they had built and were operating vapor recovery plants. Thirteen companies with a refining capacity of 47,050 barrels per day reported that they had such plants under course of construction. There were 66 companies without vapor recovery plants but the combined capacity of these refineries was only 270,420 barrels per day.

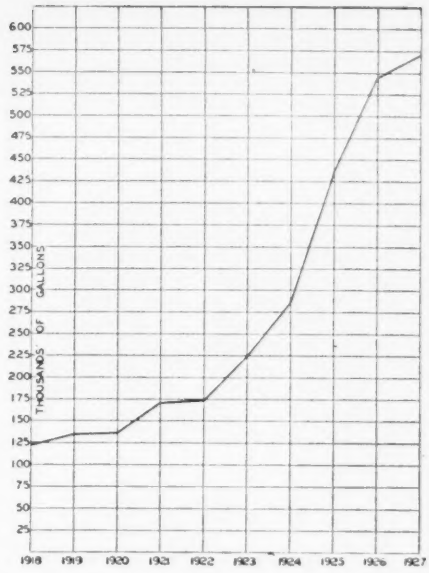

Fig. 2—Daily average production of gasoline through vapor recovery systems at oil refineries with a 1927 capacity of 1,727,520 barrels per day, representing 60.95 per cent of the total active capacity of the United States

Figure 2 is a chart showing the daily average production of gasoline through vapor recovery plants from all plants which replied to the questionnaire. You will observe that in 1918 this amounted to 122,500 gallons per day, in 1919 to 134,748 gallons per day, in 1920 to 135,298 gallons per day, in 1921 to 171,442 gallons per day and in 1922 to 173,479 gallons per day.

Natural gasoline prices were higher than U. S. Motor gasoline prices in 1921 and higher still in 1922. Partly for this reason and partly, no doubt, on account of a greater desire on the part of refiners to minimize losses, the installation of vapor recovery plants began to increase about this time. In 1923 the production through vapor recovery plants was 223,781 gallons per day, in 1924, 286,546 gallons and in 1925 this had jumped to 437,362 gallons per day. There was another sharp increase in 1926 bringing the daily average production up to 544,891 gallons per day. The questionnaire was sent out late in March this year but even at that time quite a few new plants had been put into service this year and the daily average production early in April was 571,266 gallons per day.

THESE are quite astonishing figures in themselves, but it should be remembered that they represent the output of only 61 per cent of the refining capacity of the country. On the basis of these figures an estimate was prepared of the total production of vapor recovery plant gasoline at all refineries in the United States. This was done by assuming that the figures just quoted represented 61

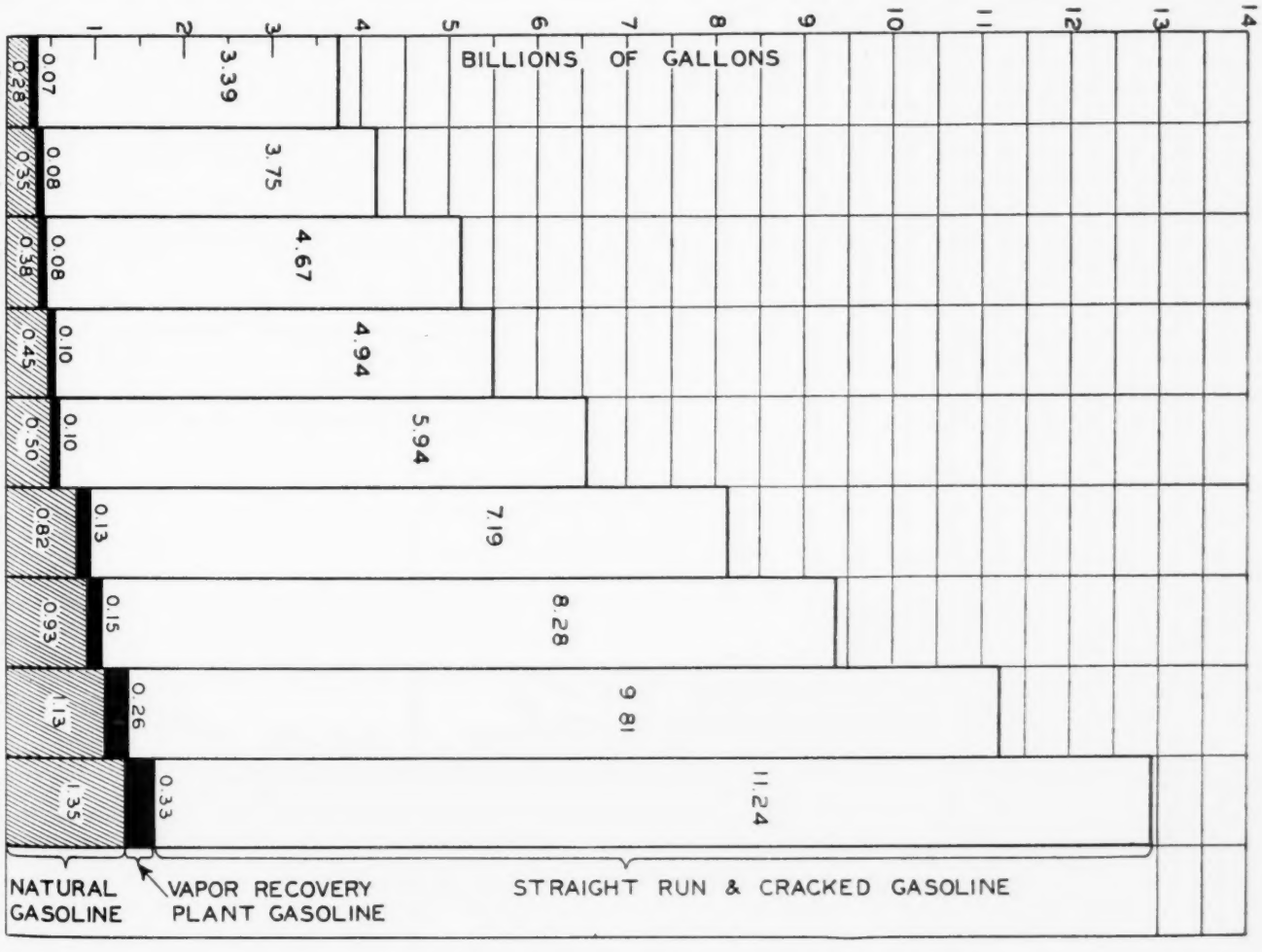

Fig. 4—Analysis of total gasoline supply of the United States by years

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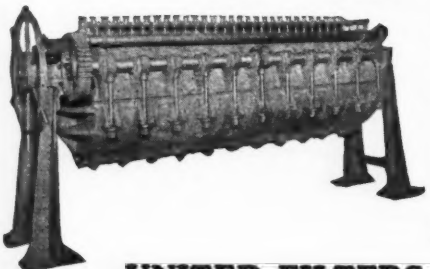

IN recently describing the contact process in a certain refinery, the writer mentions how well the color of the products holds.

This is just one of the benefits derived from the contact process.

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per cent of the gasoline produced and calculating the total on that basis.

Before making this estimate the returns were carefully canvassed to see whether they were representative of all refining districts in the country and whether the size of those reporting also was representative. In regard to size, it was found that the 183 plants covered have an average capacity of 9440 barrels while the average for all active plants of the country is 8667 barrels per day, a difference of only 773 barrels. The location of the plants also appeared very representative.

TOTAL production of vapor recovery gasoline estimated on this basis was 201,000 gallons per day in 1918; 221,000 gallons in 1919; 222,000 gallons in 1920; 281,000 gallons in 1921; 284,000 gallons in 1922; 367,000 gallons in 1923; 424,000 gallons in 1924; 717,000 gallons in 1925; 894,000 gallons per day in 1926 and 937,000 gallons per day during the first quarter of 1927.

In Figure 3 is charted the total estimated production of vapor recovery gasoline with the total actual production of natural gasoline. The lower portion of each column shows the annual production of natural gasoline and the upper portion shows the annual estimated production of vapor recovery plant gasoline.

It is interesting to note that the estimated production of vapor recovery plant gasoline in 1926 was greater than the total production of natural gasoline in the United States in 1918. The estimated total of vapor recovery plant gasoline for 1926 is 326,308,000 gallons while the nation's supply of natural gasoline in 1918 was 282,536,000 gallons and in 1919 only 351,535,000 gallons.

The commodity produced by vapor recovery plants at refineries can be compared safely to natural gasoline in value for blending. That being true it will be seen that the total available supply of blending material has been increasing even more rapidly than has been indicated by Government reports of natural gasoline production.

In Figure 4 we have an analysis of the total gasoline supply of the nation for each of the past nine years in the light of the estimate just prepared. The supply of blending material, natural gasoline and vapor recovery gasoline, is shown in the lower sections while the supply of straight run and cracked gasoline is represented by the much longer upper section.

Before leaving the general subject of vapor recovery plant gasoline it might be well to tell you of one or two other tests which were applied to the estimate given above of the total production of vapor recovery plant gasoline.

Generally speaking, the active oil refineries of the United States have been operating at 75 per cent of their rated capacity during the past year. Assuming that the 134 reporting companies operated their plants at 75 per cent of capacity their daily production of 545,-

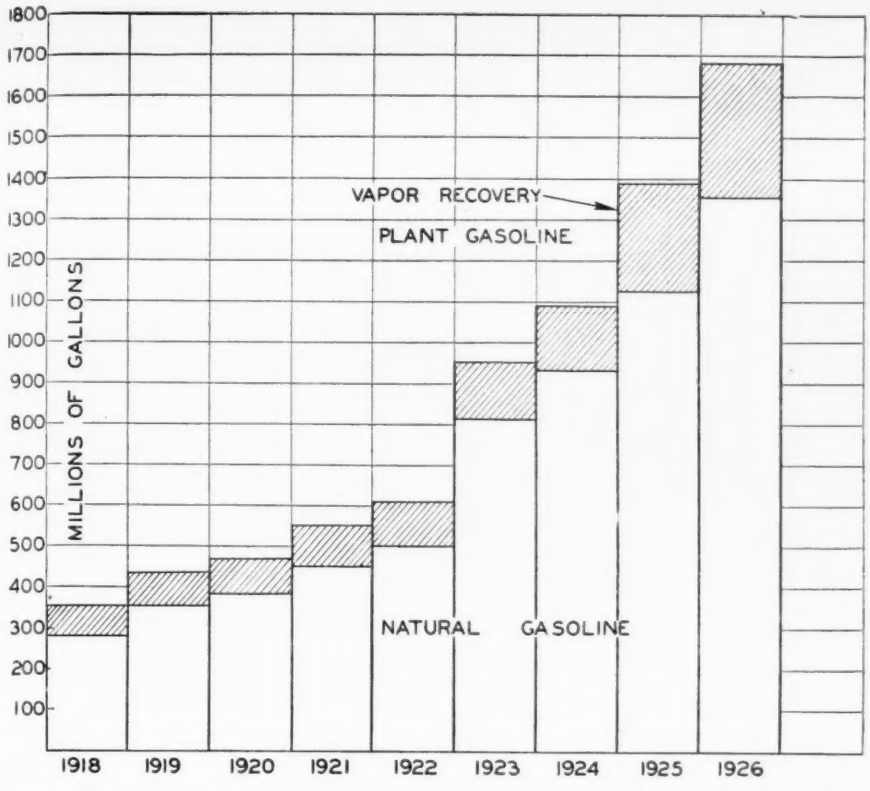

Fig. 3—Total production of natural gasoline and estimated total production of vapor recovery gasoline in the United States by years

000 gallons represented almost exactly 1 per cent of the crude charged to stills.

Taking this figure of 1 per cent as being the probable production of vapor recovery gasoline we find that on the basis of the total crude charge of 782,561,000 barrels at U. S. refineries in 1926, we would have a production of vapor recovery gasoline totaling 329,003,000 gallons. Our estimate of production of this commodity for 1926 was 326,308,000 gallons; a difference of only 2,695,000 gallons for the year.

Another interesting check against the estimate is the amount of losses sustained by oil refineries as reported in bulletins of the U. S. Bureau of Mines. These show that losses have been lowered almost exactly 1 per cent since 1918. In that year losses were 4.46 per cent and in 1926 losses were 3.44 per cent. Lowest losses were reported in 1924 and since then there has been an upward tendency probably due to cracking with an attendant increase in the volume of fixed gases produced.

Natural gasoline is useful chiefly as a blending material for mixing with refinery gasoline. For that reason the best measure of the volume of its production is in comparison with the available supply of refinery gasoline. The price at which you sell your product is dependent to a very large extent on the price at which the refiner can sell his finished motor fuel after using some of your natural gasoline to increase the volatility of his raw product.

IN figure 5 you will see a chart showing the relationship of natural gasoline to refinery gasoline in both volume and price. The upper portion of the chart shows the percentage of natural gasoline produced to the total gasoline supply of the United States for the past seven years. This chart ignores the production of benzol entirely because figures on that commodity are not available for the entire period. The amount of this material used in motor fuels is of minor importance thus far in any case. No effort has been made to estimate losses of natural gasoline sustained in shipment or blending at refineries.

THE method used in compiling these figures was as follows: The amount of natural gasoline run through pipe lines and charged to refinery stills and blended at refineries was subtracted from the total production of refinery gasoline as shown in Government figures. The resulting figure is assumed to represent the total production of gasoline from crude oil. To it was added the net production of natural gasoline to arrive at the total gasoline supply of the country. For example in 1926 the total production of gasoline at refineries in the United States was 12,588,828,000 gallons. From this was subtracted 1,024,758,000 gallons of natural gasoline reported as consumed at oil refineries, giving a net production of gasoline from crude oil of 11,564,070,000 gallons. To this was added 1,356,780,000 gallons, the total net production of natural gasoline making the total gasoline supply of the nation 12,-

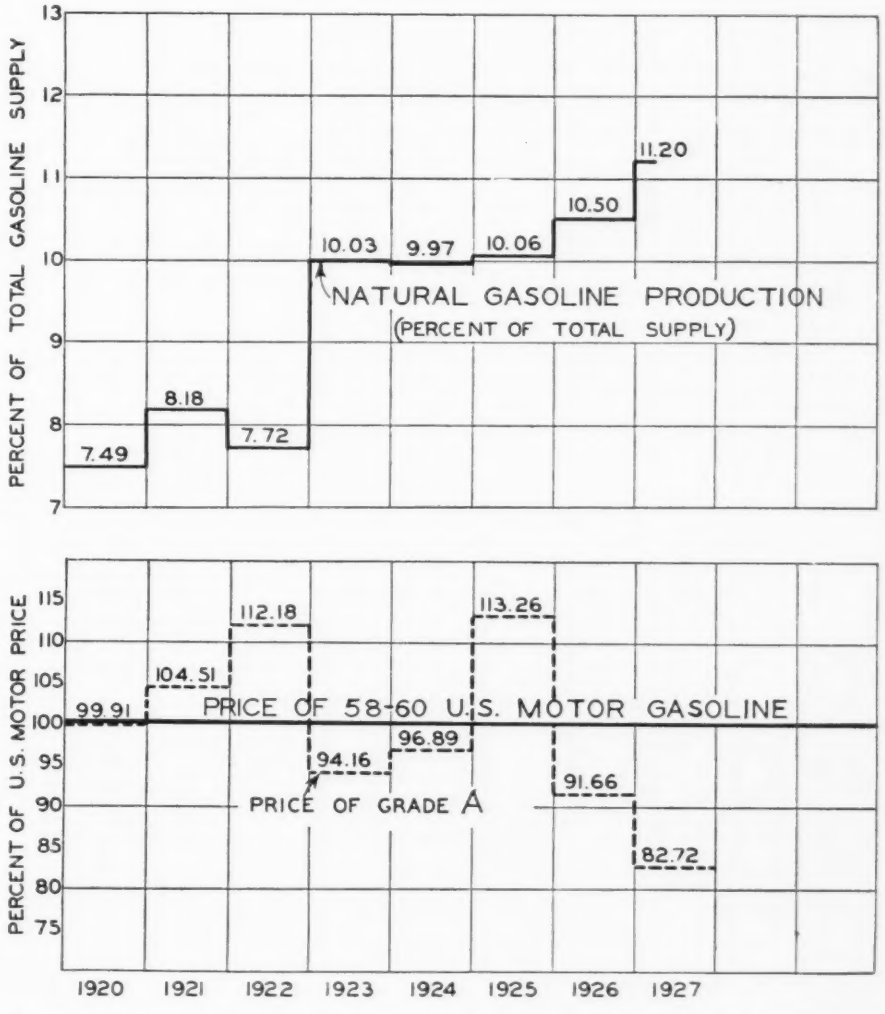

Fig. 5—Relationship of natural gasoline production to total gasoline supply and relationship of the price of Grade A to 58-60 U. S. Motor Gasoline

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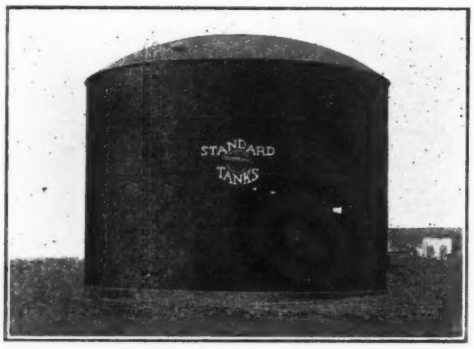

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Field storage up to 55000 barrels.

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175 gal Double-motion tilting mixer used in a grease plant.

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800 gal. Grease mixer —direct motor drive —spur-gear reduction

920,850,000 gallons. This method was used in order not to lose sight of the 332,022,000 gallons of gasoline which was reported as being produced by natural gasoline manufacturers and not reported as consumed by oil refineries.

THE lower half of the chart shows the relationship of the price of Grade A in Oklahoma to the price of 58-60 U. S. Motor gasoline in Oklahoma by years. The price of U. S. Motor gasoline is charted as a straight line representing 100 per cent. The price of Grade A is shown as some percentage of the price of U. S. Motor each year. Prices were taken from the records of NATIONAL PETROLEUM NEWS.

In 1920, you will note that natural gasoline represented 7.49 per cent of the total gasoline supply, in 1921 8.18 per cent and in 1922, 7.72 per cent. The increase in supply in 1921 did not have the effect of lowering your price level still further below that of the then Navy gasoline. That may be attributed chiefly to the efforts of the Association of Natural Gasoline Manufacturers.

You need only to be reminded of the work you did in those days when your organization was first formed to point out the reason for this situation. By standardizing your product, grading it and advertising its merits to overcome the black eye of kerosene blends you may be said literally to have pulled yourselves up by your bootstraps.

In 1922 your portion of the total supply dwindled and your price for Grade A rose to 112.18 per cent of the price of refinery gasoline. And then you broke the neck of the goose that lays the golden eggs. The production of natural gasoline was increased more than 60 per cent in 1923 until you were making one gallon of natural gasoline for every nine produced from crude oil. It is not surprising that the price of Grade A dropped to 94.16 per cent of the price of U. S. Motor. The next year your production did not increase so radically and demand began to catch up with your new level of production.

In 1925 the first seven months were marked by a declining production of natural gasoline as compared with the total supply. In the first six months it was 9.5 per cent of the total and in July had dropped to nearly 9 per cent. This brought on an acute shortage of natural gasoline and prices rose to a premium of several cents per gallon over U. S. Motor.

And then another villain, the portable plant, stalked into the picture. Some new flush fields also helped increase your production for the year as a whole to 10.06 per cent of the total gasoline supply. The increase continued throughout 1926 with the efficient aid of more portables and such fields as the Panhandle of Texas. Your product was 10.5 per cent of the total gasoline supply and your Grade A price dropped to 91.66 per cent of U. S. Motor. In the first quarter of 1927 the tendency of production was still upwards and the price

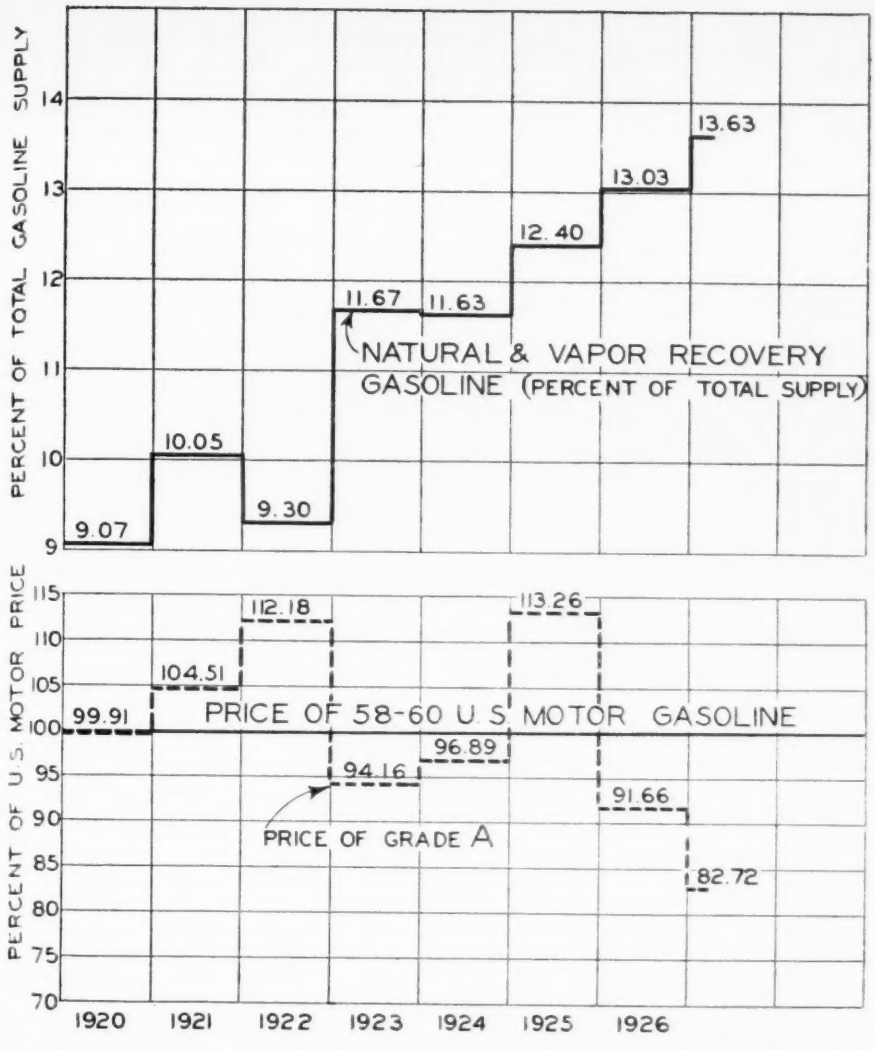

Fig. 6—Relationship of natural gasoline and vapor recovery gasoline production to total gasoline supply and relationship of price of Grade A to 58-60 U. S. Motor Gasoline

tendency downwards to a new low for recent years of 82.72 per cent.

FIGURE 6 is quite similar to the last chart you have just studied. In the upper portion of this chart, however, has been added the production of vapor recovery plant gasoline to the production of natural gasoline and the per cent of blending material available to the total supply of gasoline has been figured.

It is interesting to note that the current of supply of blending material has risen to 13.63 per cent of the total gasoline supply as compared with 11.2 per cent for natural gasoline only, a difference of 2.43 per cent while in 1920 the addition of vapor recovery plant gasoline raised the blending material supply only 1.58 per cent from 7.49 per cent to 9.07 per cent.

In this discussion we have not gone into the changes in the character of crude produced although undoubtedly the greater production of light crudes during the past two years has enabled refiners to produce a more volatile gasoline direct from the crude. Neither have we studied the cracking problem although it has had some effect. A greater tendency has been observed lately on the part of refiners to put out a high gravity motor fuel to meet competition rather than to push a straight cracked product.

YOUR attention should again be called to one fact regarding the results of the questionnaire to refiners. That is that by far the greater majority on a capacity basis have completed their vapor recovery plants and have them in full operation. The effect of their production has already been felt by you.

Out of the 1,727,520 barrels of capacity reporting, you remember that 1,410,050 barrels of capacity were already equipped with plants. Another 47,050 barrels of capacity were being equipped and only 270,420 barrels capacity or the refineries of 66 small companies, were without plants.

FROM those figures you will note that the maximum possible production of vapor recovery plant gasoline has been nearly reached. New additions will be small and relatively unimportant as affecting demand as a whole unless there is some revolution in refining practice. Your campaign of research and education undoubtedly will be felt more and more in coming months as your previous campaign was when you put Natural Gasoline back on its feet after the kerosene blend almost knocked it out.

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Satisfied Customers are the life of your business— ***and there is nothing that satisfies like real quality, at the right price.***

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"Zero Cold Test Oils"
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OIL is not an inexhaustible or replaceable commodity The present wasteful flood of production will subside, but the loss for the future through the waste of the present will be irremediable

Our future National safety depends largely on an ample, continuous supply of liquid fuel for our ships, our aircraft, our automobiles and our trucks

Whatever is essential for the Nation's safety and protection is the Nation's business and if the industry won't do the needful to insure such protection the State and Federal Governments surely can and will

When everybody talks about the need of regulation for control

Treating of Water for Boiler Feed Pays Handsome Dividends

By F. B. Good
Chemist, The Texas Co., Breckenridge, Texas

Read Before Sixth Annual Convention, Association of Natural Gasoline Manufacturers, Tulsa, May 25

SOME time ago, I had the good fortune of reading Mr. Kaye's excellent paper on water; and I want to say that Mr. Kaye, having covered the subject of water in such a thorough manner, has left little for me to say, so I shall confine this paper to water treatments, costs and reactions, starting from the record and bring it down through different phases to the present day.

The first water treatment of which we have any record is in the Bible, as follows: "And the men of the city said unto Elisha: Behold, I pray thee, the situation of this city is pleasant as my Lord seeth, but the water is naught and the ground barren. And he said, bring me a new cruse, and put salt therein; and they brought it to him, and he put forth into a spring of these waters and cast the salt therein and said: 'Thus saith the Lord, I have healed these waters, there shall not be from thence any more deaths or barren land. And these waters were healed unto this day.'" (*Kings*-2-19-22).

Frontinus, who wrote of the water supply of the Eternal City (Rome) 70 A. D. said, "Of these waters six are drawn into covered catchbasins this side of the seventh milestone, on the Latina, (Tiber) in which, resting from their run and taking a new breath, they deposit their sediment."

Space will not allow the numerous other mentionings in which history abounds, so we will jump to the 18th century; the beginning of our present system. The first filter was built in 1839 by James P. Simpson for the Chelsea Water Co. of London, England, and the first in this country by J. Kirkwood, for the city of St. Louis in 1869; this being evolved through improvements into the system of the present day.

THE modern treater consists of a large cylindrical steel tank. In the center of this tank is a conical tube or downtake, open at the bottom and of sufficient size to retain the water during the mixing period of from 45 to 55 minutes, according to volume. The chemicals and the raw water being mixed at the top of this tube in definite proportions continuously, the conical form of the downtake impedes the flow of water, allowing the precipitate to settle on the bottom as a sludge and is flushed away by means of a valve, the water continuing on its way upward through a series of baffles which knock and retain more of the precipitate to the filter where the last of the flocculent sediment is removed, passing out from the filter soft and clear, ready for distribution.

The types of these treaters vary. Some are conical, others have flat bottoms with perforated pipes for flushing the sludge away. They also have a number of very ingenious devices for proportioning the flow of chemicals to the flow of water.

These consist of the weir or orifice proportioning with variable feed; water motors operated by pump pressure, depending upon comparative cylinder displacement ratio; constant raw water control with constant chemical feed, tipping bucket, and a number of other patents, all of which can be made to give satisfactory service when given proper supervision. In fact you can accomplish almost any desired result with one of these plants.

THE plant I have in mind was designed for 9000-gallon-hour capacity and has been treating 12,000 gallons an hour very successfully for the last six years, the raw and treated water having the following analyses:

Raw Water

	P. P. M.	G. P. G.
Suspended matter	4.0	0.23
Total Solids	418.0	24.25
Silica	14.0	.81
Iron and Alumina	1.0	

Consisting of the Ions of

Calcium	179.8
Magnesium	41.5
Sodium	44.9
Bi-Carbonate	145.2
Sulfate	125.2
Chloride	5.2

Hypothetically Combined

Calcium bi-carbonate	179.8	10.42
Magnesium bi-carbonate	41.5	2.40
Magnesium sulfate	128.0	7.48
Sodium chloride	8.6	0.50
Silica	14.0	0.81
Iron and Alumina	00.0	0.00

After Treatment

Mono-carbonate alkalinity	14.0	0.8
Bi-Carbonate alkalinity	4.0	0.2
Caustic alkalinity	0.0	0.0
Salt	8.6	0.5
Silica	4.0	0.2

It is very obvious from the above analysis of the raw water that it contains approximately 3½ pounds of scale-forming solids per 1000 gallons of water; these solids being brought down by treatment to less than a quarter pound to the 1000 gallons.

Now, if we take the data composed by some of the most eminent engineers in this country today, we will find that they claim that, for every pound of scale-forming matter removed from the water you save 13 cents per pound in fuel and boiler efficiency alone, not taking into consideration the intangible saving from the elimination of loss of production and pipe corrosion.

If we take the results of these engineers, you will find that on the above water treating the company has saved, in boiler efficiency and fuel alone, $121.67 per day or $44,414.20 per year, at a total cost of chemicals for treatment of $6 per day or $2,190 per year. During this period they have not had to boil out an engine jacket with acid or lost one from scale formation. At the same time the water used by them, being a split water; not having sufficient capacity to treat the entire volume of water pumped.

THE next treatment taken into consideration, which I consider very bad form but which is most universally employed at the present time is by use of compounds. They are much better than no treatment at all and there is no doubt but what they have a tendency to prolong the life of your flues and increase the efficiency to fuel consumed. There being a compound made for every known condition existing in water, for your information I will select two and give you their analyses, from which you may draw your own conclusions:

Number 1

Water	57.91%
Sodium Carbonate	4.73%
Sodium Silicate	33.13%
Caustic Soda	1.03%
Undertermined	2.93%

Number 2

Water	35.27%
Sodium Carbonate	36.23%
Starch	6.04%
Sodium Phosphate	7.25%
Sodium Chloride	Trace
Sodium Oxide	5.77%
Caustic Soda	2.30%
Sodium Chromate	2.30%
Mercury	5.55%
Kerosene	Trace

Reactions occurring in the treater, the same being applied to the boiler compounds when composed of the same compound coming in contact with the same substances:

Sodium carbonate plus aluminum sulfate equal sodium sulfate plus aluminum hydrate plus carbonic acid plus water.

3 Na_2CO_3 plus $Al_2(SO_4)$ 3 equal 3 $NaSo_4$ plus $Al_2(OH)_6$ plus Co_2 plus H_2O.

Sodium carbonate plus calcium hydrate equal sodium hydrate plus calcium carbonate. NA_2CO_3 plus $Ca(OH)_2$ equal $2NaOH$ plus $CaCO_3$.

Sodium carbonate plus calcium chloride equal sodium chloride plus calcium

Pennsylvania Oil PLUS

Plus what?—Plus the fact that it is blended from 450 Bright Stock (Sharples Process) refined in ONE Freedom plant—and from 100% Pennsylvania Crude Neutrals refined in ANOTHER Freedom plant.

Thus, under *one* supervision, with the *one* guarantee of a 48-year-old refinery, a 100% Pennsylvania Motor Oil is blended to YOUR specifications — or a complete line of oils can be furnished — an oil or a complete line of oils that enable you to get business and to HOLD it.

Guaranteed 100% PURE PENNSYLVANIA OIL

For forty-eight years, The Freedom Oil Works Company has specialized in the refining and blending of 100% Pennsylvania Oils. In one way, that explains why jobbers the country over come to this concern for their requirements.

Deliveries can be made immediately, in tank cars, compartment tank cars, barrels, or drums. Write for quotations.

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less neutral to blend to the ordinarily required specifications.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

carbonate. Na_2CO_3 plus CaCl equal 2Na Cl plus $CaCO_3$.

Sodium carbonate plus carbonic acid plus water equal sodium bi-carb. Na_2CO_3 plus CO_2 plus H_2O equal 2 $NaHCO_3$.

Sodium carbonate plus magnesium sulfate equal sodium sulphate plus magnesium carbonate. Na_2CO_3 plus $MgSO_4$ equal Na_2SO_4 plus $MgCO_3$.

Sodium carbonate plus sulphuric acid equal sodium sulphate plus Carbonic acid plus water. Na_2CO_3 plus H_2SO_4 equal Na_2SO_4 plus CO_2 plus H_2O.

CALCIUM hydrate plus carbonic acid equal calcium carbonate plus water. $Ca(OH)_2$ plus CO_2 equal $CaCO_3$ plus H_2O.

Calcium hydrate plus carbonic acid equal calcium bi-carbonate. $Ca(OH)_2$ plus $2CO_2$ equal $CaH_2(CO_3)_2$.

Calcium hydrate plus calcium bi-carbonate equal calcium mono-carbonate plus water. $Ca(OH)_2$ plus $CaH_2(CO_3)_2$ equal $2CaCO_2$ plus H_2O.

Calcium hydrate plus ferrous sulfate plus water equal calcium sulphate plus ferrous hydrate plus water. $Ca(OH)_2$ plus $FeSO_4$ plus H_2O equal $CaSO_4$ plus $Fe(OH)_2$ plus H_2O.

Calcium hydrate plus hydrochloric acid equal calcium chloride plus water. $Ca(OH)_2$ plus HCl equal CaCl plus H_2O.

Calcium hydrate plus magnesium mono-carbonate equal calcium carbonate plus magnesium hydrate. $Ca(OH)_2$ plus $MgCO_3$ equal $CaCO_3$ plus $Mg(OH)_2$.

Calcium hydrate plus magnesium bi-carbonate equal Calcium carbonate plus magnesium mono-carbonate. $Ca(OH)_2$ plus $MgH_2(CO_3)_2$ equal $CaCO_3$ plus $MgCO_3$.

ALUMINUM sulfate plus calcium oxide equal aluminum hydrate plus calcium sulfate plus water. $Al_2(SO_4)_3$ plus $18H_2O$ plus CaO equal $Al_2(OH)_6$ plus $3CaSO_4$ plus $15\ H_2O$.

Aluminum sulfate plus magnesium carbonate equal aluminum hydrate plus magnesium sulfate plus water. Al_2SO_4 plus $18H_2O$ plus $MgCo_3$ equal $Al_2(OH)_6$ plus $MgSO_4$ plus $15\ H_2O$.

Aluminum sulfate plus calcium mono-carbonate equal aluminum hydrate plus calcium sulfate plus water. Al_2SO_4 plus $18\ H_2O$ plus $CaCO_3$ equal $Al_2(OH)_6$ plus $3CaSO_4$ plus H_2O.

The above are a few of the most important equations and reactions taking place in the treater and with the compounds, they continue as follows:

The caustic soda precipitates the carbonates of lime and in doing so the carbonate of soda is formed, which in turn, combines with the sulfates of lime, forming the sulfate of soda which is harmless. The sodium silicate functions in the same manner only it is colloidal in nature, which has a tendency to prevent scale from adhering to the tubes and plates. Sodium phosphate is also used in decomposing the sulfates of lime and magnesium; it forming the sulfate of sodium and the phosphates of lime and

magnesium, the former remains soluble and is harmless, the latter being deposited in the form of loose crystals.

PHOSPHATES also act on the carbonates of lime and magnesium, forming phosphates of them and at the same time neutralizing the carbonic acid released; the sulfuric being released as a sulfate. Mercury also plays an important part especially in high-magnesium-chloride content, which is very corrosive in action. It combines, forming mercuric chloride which is precipitated.

It will also form an amalgam on the sheets and flues, preventing adhesion of incrustants. Kerosene is also supposed to have the faculty of penetrating this scale, preventing it from adhearing to the tubes. Those of you who are acquainted with the flotation of ores know that globules of oil will adhere to the sulfates, bringing them to the surface. The same applies when kerosene is used in a boiler. It adheres to the sulfates, preventing them from sticking to the tubes so they can be blown off.

We can size up all our water troubles and cures as follows:

TROUBLE DUE TO WATER

Trouble—Corrosion.
Cause—1. Chlorides of sulfates of Mg. Sugars and Acids.
2. Dissolved Carbonic Acid and Oxygen.
3. Electrolytic Action.
Cure—1. Soda-ash.
2. Lime, Caustic soda and Heating.
3. Zinc plates (only in the absence of oxygen).

Trouble—Incrustations.
Cause—1. Bicarbonates of lime, iron and Magnesium.
2. Organic matter.
3. Sulfates.
4. Organic matter.
Cure—1. Heating feed water Caustic soda lime.
2. Soda-ash.
3. Soda-ash.
4. Alum and Filter.

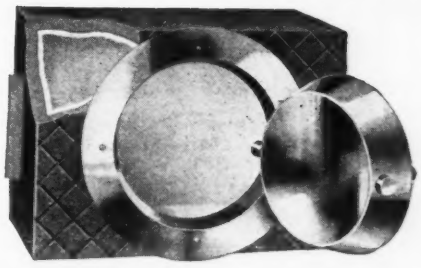
WE find upon examination of our gas engine jackets a formation in which the carbonates are predominant. These carbonates are commonly called limestone or marble. They are not soluble in pure water but are soluble in a water containing free acid.

After they are once in solution and a temperature of 200 degrees applied they are precipitated as common carbonates, forming a scale; whereas it takes a temperature of 290 degrees to precipitate sulfates.

THIS compares to a boiler pressure of about 45 pounds, consequently the gas engine jacket does not reach sufficient temperature for their formation, while in the compressor you will not find either a sulfate or carbonate formation but a formation of algae, which has gone through the temperature of this machine.

It changes slightly in appearance but upon examination wtih a glass you will find it still retains its resemblance to your so-called moss. This nuisance can be removed by the use of copper sulfate in quantities of 5 parts of copper

The GUARDIAN BUILT-IN WALL SAFE
For Your Stations



HERE is a real safe designed for filling stations. Can be built into side walls or embedded in floors. Large enough to hold money and station records — yet small enough to be kept out of sight. Built like a bank vault with large size Yale combination lock.

The cost is so low you can install this safe in all your stations.

List Price $42.00

Write for discounts and further details

Dealers or Manufacturing Representatives Wanted

GUARDIAN SAFE COMPANY
1368 Cook Ave., Lakewood, Cleveland, Ohio

GULF Refining Company

General Sales Offices
PITTSBURGH, PA.
District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia

REFINERS OF OKLAHOMA TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

WAIT, MOTHER, I HAVE A METHOD ALL MY OWN
OIL MAN
MOTHER NATURE
ETHYLENE GAS
NOTE—A BY-PRODUCT OF CRACKING, ETHYLENE GAS, IS NOW USED TO RIPEN FRUIT
SEDGWICK

AND NOW HE'S A NATURE FAKIR

sulfate to the 1,000,000 parts of water and a stronger solution would not hurt if the water is not to be used for drinking. Chlorine is also supposed to have the same property for the destruction of algae. This can be obtained in the form of calcium chloride and has about 35 per cent of available chlorine.

I have an analysis of water from a coil pit and have reason to believe this is a fair example of the condition existing in a great majority of them. Gentlemen; such conditions seem unbelievable in this modern age when elimination of such can be made as to moderate a cost compared to the destruction such a water as this will create. This water tests as follows:

Solid mater, ... 286½ grains—a little over 3½ grains of solid matter in suspension and nearly 20 grains of free acid per U. S. gallon of 231 cubic inches.

Such an acid condition in any water coming in contact with surfaces will cause corrosion internally and externally which will destroy them years before their time under ordinary conditions.

Summed up, due to impure water we have scale formation in the jackets of engine cylinders, scale formation on the tubes of the boilers, plus corrosion of steam piping particularly where live steam is introduced into the steam still, and the so-called separating tanks of the fire still.

These troubles by themselves bring about an excessive maintenance cost. Collectively they are prohibitive, when could be installed at a very nominal cost we have in mind that a treating plant with material usually found around a gasoline plant that would eliminate most of these troubles, and we may safely say that the gasoline plant will ultimately have its water treated and in that way eliminate most of these accumulative troubles.

Will Outline Policy On Technical Work

NEW YORK, May 21.—The committee appointed by President E. W. Clark of the American Petroleum Institute last winter to consider and make recommendations as to what the policy of the Institute should be in relation to technical and scientific work and toward other technical societies, will hold a meeting at French Lick, Ind., June 20, 21 and 22.

E. W. Isom, Sinclair Refining Co., 45 Nassau st., New York, is chairman of the committee. Suggestions bearing on the question are invited from members of the Institute by Mr. Isom.

It is expected that final recommendations of the committee will be prepared at the coming meeting and it is also expected that these will include a definite scheme of organization within the Institute and under its supervision, of all its technical members.

Letters to the Editor

Editor:

"I enclose a sales letter just received. It seems to me it is about as misguided as anything could be. Why should these Independents endeavor to wallop the tar out of Standard lines and brands? It doesn't seem to me that it gets anywhere at all. Here is the circular:

"Quite a few motor car owners are being confused today by the numberless special grades of gasolines that are being offered for sale. The larger companies are jumping up and down, advertising, changing the names of their gasolines so fast and furiously that even their own salesmen are in doubt as to the qualities of their goods. It seems to be 'Do anything to attract the Motorist.' Some companies have as many as four grades. Are you buying quality or fancy names? "We are still selling the same honest old fashioned, pure gasoline as we *always* have. No change - No dope - No bunk - No flowers - No fancy names. Just honest quality which always will give efficiency and satisfaction."

"There Are No Fancy Names For Honesty."

The Editors' Viewpoint

National Petroleum News

Following Golden Rule Would Help

IT may be a very good thing for the oil industry that Henry Ford did have his company grocery, drygoods store and meat shop sell not only to his own employees, but to the general public at a cut price, and it may be good for the oil industry that the merchants of Detroit put up such a clamor that merchants elsewhere in the country heard it and likewise protested, so that Mr. Ford, according to a recent announcement, has closed his stores to the general public.

It is the old story of intolerance of men in one line of business for the business interests of men in other lines. The oil industry has felt that intolerance time and time again. We have seen not only state, municipalities and farm bureaus go into the oil business when there wasn't the slightest justification for it, but also big manufacturing institutions, some of whom were selling their own factory output to the oil industry—yet they all thought that because they might be able to save a few pennies on the price of gasoline for a little while and save maybe a few thousand dollars to a group of people on their districts, that they were saving the world by contributing their share towards a demoralization of the oil business.

To every man—and we don't doubt but to every oil man—it looks like fine business to get together and buy a barrel of nails, or some other commodity, and cut out the retailer's profit. Undoubtedly there are many oil companies whose employes are running little co-operative purchasing enterprises. No doubt the officers of these companies think that it is quite a smart thing for those employes to save themselves a few dollars.

They don't multiply it to the size of Mr. Ford's venture, nor do they think of in in relation to similar ventures started against the oil industry. If they did, the employers would shut down on it and make the employes themselves see the fallacy of it.

Henry Ford's fundamental principle has been that if you pay the workers enough money they can and will keep that money circulating and thus you will have prosperity, and yet Ford, or possibly it was his radical associates, could not see that that same idea, if it was sound, would also apply to the purchases of the Ford company and of the Ford company's employes.

Ford cannot make cars and sell them only to his employes. He has got to sell them outside of that army of his, and in order for those people outside of his army to have the money to buy cars with, they must have a means of earning the money. And if they are in the grocery or the butcher business or a drygoods store they must be allowed to conduct their business peaceably and without molestation by the price cutting of Mr. Ford.

So any in the oil industry who may be contributing towards any co-operative enterprises, no matter how small, might well consider that they should do to others as they like to be done by.

If this Golden Rule, often quoted but relatively seldom adhered to, was followed just a little bit more in business today, there would be much more peace between business men and more peace between industries.—W. C. P.

Sharpshooting On Oil Tests

THERE are always two sides to every story, of course, and here is one side of this story.

If some of these hard-boiled, particular buyers of petroleum products could hear what the refiners think of them when they pull a seemingly sharp trick, they might, for the benefit of their own self-respect, change their tactics.

Some few marketers, and they oftentimes are otherwise very reputable concerns, have a standing reputation with refiners that any goods received by them after the market has dropped are always "off specifications," because almost invariably complaint is made, an argument ensues and there must either be a fight or a concession.

All tests are not absolute, by any means. Hardly any two of the best chemists will get exactly the same results. The refining and treating of oil is not an absolutely exact thing. No matter how good the refiner, he can't always make certain that all of the 10 or 12 tests on lubricating oils will come out just exactly the way he plans. Everybody recognizes a certain degree of tolerance on tests.

While a buyer is entitled to get what he orders, nevertheless, there should be a reasonable tolerance allowed off the specification. Seldom does the buyer,—who, when the market has dropped, and he finds something wrong with a shipment—give the advantage of any adjustment to his customer. The slight variation from specification is not sufficient to make any difference in the actual use of the product. It is simply used as a means of getting a lower price. If the buyer had turned around and sold that as damaged goods, it would make the case a bit different, but he doesn't, in the vast majority of cases.

One refiner the other day told of a long wrangle he had with a customer which finally hung on whether or not the oil was sweet. It was submitted to a nationally known chemist. He said it was sweet. The customer still protested. The refiner continued to inquire in just what way wasn't it sweet, and the buyer's agent, a broker, came back with the statement that it didn't "taste as sweet" as they thought it ought to.

That got the refiner's goat and he told him that there was one thing that he didn't guarantee that oil to do and that was to talk and sing the customer to sleep, and he refused to accept anyone's palate as a means of showing whether the oil was sweet or not, but stood pat on the chemist's test and made the buyer pay the whole amount and also the demurrage that had been accruing on the car.

We know that there have been refiners who have taken advantage of the jobber. We know there have been refiners, when the market started to rise, have failed to ship—never had cars ready and offered many other excuses to avoid filling a contract. But two wrongs never made a right.

The old motto "DO AS YOU WOULD BE DONE BY" can well be hung on every buyer's wall, as well as on every refiner's.—W. C. P.

Mc-Man Oil & Gas Company

P. O. BOX 712 - TULSA, OKLA.

Oil Producers and Manufacturers of all grades of Natural Gasoline

J. A. Chapman, *Pres.*
R. M. McFarlin, *1st Vice-Pres.*
H. H. Rogers, *2nd Vice-Pres.*
John Rogers, *3rd Vice-Pres.*

H. G. Barnard, *Treas.*
E. B. McFarlin, *Ass't Treas.*
W. G. Guiss, *Sec'y*
A. H. Rogers, *Ass't Sec'y*

The NATIONAL REFINING COMPANY

PETROLEUM PRODUCTS

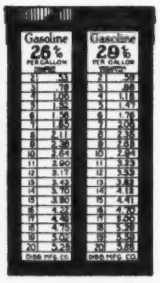
THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

National Headquarters
NATIONAL BLDG., CLEVELAND, O.

New Gasoline Price Chart

Shipped on Approval

Double Chart $3 Size 7x12"



Single Chart $2 Size 4x12"

Steel frame, with glass front. Shows price of 1 to 20 gallons of gas at all prices and fractions. Hangs on pump, post or wall. Customers can see for themselves price of gas and amount of purchase.

DIBB MFG. CO.
515-3rd Ave. N. E.
Minneapolis Minn.

Flood Stops Louisiana Pipeline Shipments

Staff Special

HOUSTON, May 20.—Advices from Shreveport indicate flood damage to the system of the Standard Pipeline Co., Inc., by a break in the Atchafalaya river levee at Melville, La., May 18, will not prevent handling of customary quantities of crude from Oklahoma, Arkansas and Louisiana fields. Shipments will be diverted to storage in the Shreveport district, where sufficient room to last 60 days is announced.

Standard Pipeline Co., Inc., operates in Louisiana and Arkansas, where it is a companion corporation to the Standard Oil Co. of Louisiana. The Standard pipeline also connects with the Oklahoma Pipeline Co. system, at the north end. The Oklahoma pipeline supplements Carter Oil Co. in the Oklahoma-Kansas territory. All are 100 per cent subsidiaries of the Standard Oil Co. of New Jersey.

The break in the Standard Pipeline Co.'s system was between its Melville pumping station and the Atchafalaya river crossing, where all six lines are believed to have been washed away. At the time this was written the station and the area, between it and the levee which broke had been submerged in 20 feet of water. Wreckage from the town of Melville is reported to have damaged the pumping station to the extent its complete reconstruction probably will be required.

In addition to crude gathered and transported in the Louisiana-Arkansas territory, the Standard Pipeline Co. had been receiving about 75,000 barrels daily of crude from its Oklahoma connecting link.

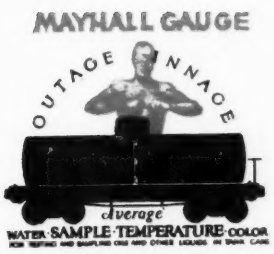
The Standard refinery at Baton Rouge, which is on high ground, has not been materially affected by Mississippi river flood conditions, except with regard to shipments into submerged territory.

Chicago Oil Men's Club Plan an Outing

CHICAGO, May 19.—At the Chicago Oil Men's club meetirg today B. L. Majewski, Shaffer Oil & Refining Co., announced that E. G. Youngberg, Wadhams Oil Co.; E. L. Jones, Blue Ribbon Service Stations; Melvin Keim, Apex Motor Fuel Co., and George C. Peterson, George C. Peterson Co., have been appointed to his committee which is making arrangements for the club's annual summer outing.

In keeping with the club's revived policy of having a speaker once a month, Harry L. Fogelman, of the Sheldon School, Chicago, gave an address on the "Master Salesman." Mr. Fogelman did not speak of selling petroleum products, but outlined the fundamentals of a successful salesman and of the sale.

ANNOUNCING



The Mayhall Gauge

A portable and accurate instrument for testing and sampling oils in tank cars.

This gauge is conveniently portable, weighing between twelve and thirteen pounds, manufactured from high-grade materials that will not corrode or rust.

It is mechanically operated, simple and practically foolproof and we have recently been granted government patents.

It will trap three samples of approximately 230 CC's each at the top, middle and bottom any distance from the shell that is desired.

It will trap the temperature of each sample with certified thermometers adjusted inside each cup, thereby preventing the mercury from coming in contact with any strata of oil except where the sample is taken.

It measures the car for water and moisture by the use of water searcher paper especially arranged at the bottom of staff.

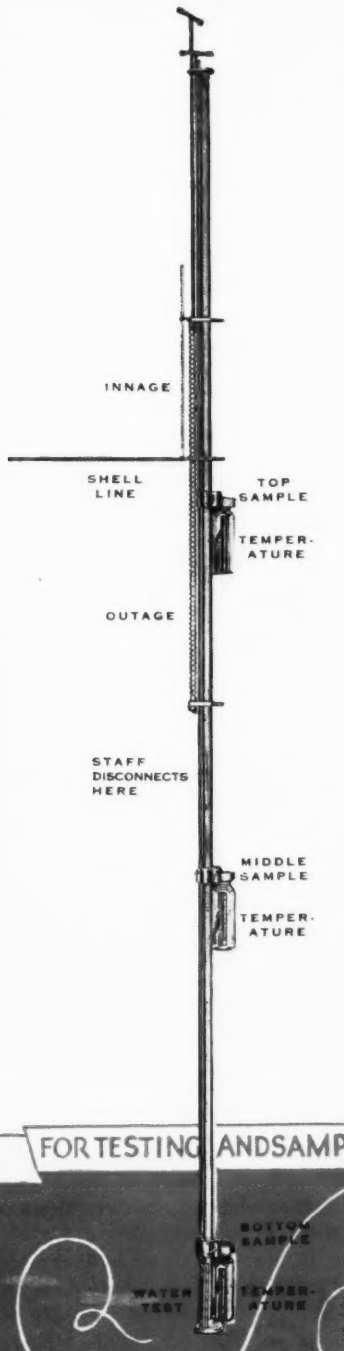
It measures the car for innage or outage by accurately locating shell line and trapping the liquid level line of the car in adjustable tell gauge. It gives three color visions from the hand blown sample cups.

It operates from the center manhole and from the top of the dome, eliminating danger from gases.

From practical experience we feel that the average accurate temperature obtained by this gauge is one of its most important accomplishments. It is generally conceded by authorities who have studied the subject that average temperature is impossible to get under present procedure, and that it is most important. In fact, all the tests performed by this gauge are absolutely necessary and important, in determining the volume and correctness of the oil shipped or received, and it requires less than five minutes time. This method and principle is approved by the leading authorities.

Accuracy makes mutual confidence.

Mail the coupon—it means dollars to you.



The Mayhall Gauge

Manufactured and Distributed by

STANDARD LIQUID TESTING DEVICES, *Inc.*

General Offices
735 Kennedy Bldg.
TULSA, OKLAHOMA
FACTORY, MILWAUKEE, WIS.

Standard Liquid Testing Devices, Inc., Kennedy Building, Tulsa, Oklahoma.

I am interested in the Mayhall Gauge and the Improved Method of Sampling and Testing tank cars. Kindly send me more information.

Name _____

Address _____

Gasoline Distribution Costs What?—An Ohio Marketer Reveals His Records

By Roger B. Stafford
N. P. N. Staff Writer

CLEVELAND, May 20

HOW much does it cost to market a gallon of gasoline? Judging from the cut prices found in most parts of the country today, one would get the opinion that the cost must be low, but when a company that keeps complete records opens its books it reveals a different story.

The Cities Service Oil Co. of Ohio recently presented to 17 groups of Ohio petroleum marketers the operating costs of one of its good bulk plants which served two of its own service stations and 31 dealer pumps.

Cost of handling and delivering gasoline at this plant, located in a community of 60,000 population, was 1.66 cents a gallon last year. Records showed that at the two service stations whose gallonage averaged 584 gallons apiece a day last year—a gallonage that is considerably above the average for the country— the cost of selling gasoline averaged 3.87 cents a gallon. Thus the total cost of this company to get gasoline from a tank car on its siding into an automobile tank at a service station was 5.53 cents a gallon.

Cost data were presented to the Ohio marketers by C. B. Fehr, Cleveland, of the Cities Service wholesale department. He covered every part of Ohio at meetings which were attended by 25 to 75 oil men each. He was accompanied on the trip, which lasted three weeks, by W. A. Milne, executive secretary of the Ohio Petroleum Marketer's Association.

The Cities Service company, Mr. Fehr said, charged 6 per cent on its invested capital in arriving at its cost figures. It set up depreciation reserves some of which were lower than many other conservative companies charge, a fact that means the 1.66-cent bulk plant handling cost was really low. Mr. Fehr said the bulk plant handling cost of all Ohio marketers last year averaged between 2½ and 3 cents a gallon.

The company owns the ground on which its bulk plant and filling stations are built; it has brick buidings so its depreciation charge was figured at only 3 per cent. On leased ground the depreciation rate must be sufficiently high to depreciate fully the cost of the buildings and the unsalable equipment at the expiration of the lease.

How cut price dealers can damage a legitimate dealer who operates in a businesslike way and follows good business practices can be illustrated by a comparison of costs and some existing selling prices.

DEALERS in northern Ohio are selling gasoline at 17 cents a gallon including the state tax of 2 cents a gallon. Assuming they are selling 58-60 U. S. Motor gasoline, which they probably are not, and using the Cities Service cost statistics, their actual costs are approximately as follows and possibly higher:

Gasoline, Group 3	6.50c gal.
Freight	3.70c gal.
Bulk plant cost	1.66c gal.
State tax	2.00c gal
Total tank wagon cost	13.86c gal.
Service station cost	3.87c gal.
Total delivery cost	17.73c gal.

If a cheaper grade of gasoline is used 56-58 or 58-60 450 end point on 56-58 U. S. Motor gasoline, the difference, based on today's Group 3 prices, would be only 0.25 cent less or 13.61 cents a gallon at the tank wagon or 17.48 cents at the service station.

Gasoline delivered by tank wagon, tax paid, may be had in northeastern Ohio today for 12 cents and at the pump for 17 cents. In either case there is an actual loss if fair and rightful charges were made to ascertain actual handling costs.

At the top of this page is a cost account, prepared by Mr. Fehr and explained by him at the group meetings. The size and equipment of the bulk plant and service stations and how he arrived at the investment and depreciation charges, he explained substantially as follows:

THE bulk plant covered one and a half acres and included necessary drives and four-car railroad siding. There was a brick building with five-car garage, office and toilet, pump house and loading shed. Gasoline handling equipment included four 25,000-gallon upright tanks, one electrieal double unit unloading pump. The building was heated

Gasoline Marketing Costs From Siding to Customer Storage or Car

1.	CAPITAL INVESTMENT:	
	(a) Main or Bulk Plant ($36,000)	
	1. Ground including driveways and sidings	
	2. Buildings	
	3. Storage tanks	
	4. Equipment—unloading, power, lighting, heating	$ 2,160.00
	5. Distributing equipment ($12,000)	720.00
	6. Loaned equipment ($6,975)	418.50
2.	OPERATING EXPENSE	
	(a) Main plant	
	1. Truck operating expense:	
	a. Gas and oil	804.00
	b. Tires	557.00
	2. Depreciation and maintenance:	
	a. Ground including driveways and sidings	
	b. Buildings	
	c. Storage tanks	
	d. Unloading equipment	1,080.00
	e. Distributing equipment, taxes, insurance	5,270.00
	f. Loaned equipment	1,395.00
	g. Power, light, heat, telephone, etc.	324.00
	3. Salaries: Owners, truck drivers' and clerical help, proportioned between main plant and filling stations	7,050.00
	4. Sales expense:	
	a. Advertising	220.00
	b. Getting and holding business	360.00
	5. Allowances and bad debts	1,373.00
	6. Evaporation and temperature change losses	745.00
	7. Taxes and insurance	500.00
	Total for 1,383,892 gals. sold	$22,977.50
	Cost a gallon	.0166
	CAPITAL INVESTMENT:	
	(b) Two filling stations:	
	1. Ground	$ 1,200.00
	2. Buildings	600.00
	3. Equipment	
	4. Installation	240.00
2.	OPERATING EXPENSE:	
	(b) Two filling stations:	
	1. Depreciation and maintenance on ground, buildings, driveways, equipment and installation	2,475.00
	2. Salaries and percentages, service station salesmen and main plant proportional	9,550.00
	3. Power, light, heat and miscellaneous	1,730.00
	4. Allowance and bad debt	65.00
	5. Losses due to evaporation, spillage, temperature change	95.00
	6. Taxes and insurance	500.00
	Total for sale of 425,327 gals.	$16,455.00
	Cost a gallon	.0387

with gas. This set up, including the ground, cost $36,000. At 6 per cent a year on this investment an item of $2,160 was set up in the marketing costs account.

The distributing equipment consisted of three 2½-ton 800-gallon tank trucks which cost an average of $4000 apiece. At 6 per cent on this $12,000 invested in trucks, the marketing cost item was $720.

The loaned equipment consisted of 31 pumps and tanks at an average cost of $225 a tank and pump installed, a total of $6957. Six per cent on this was $418.50. Gasoline, oil tires and tire repairs for the trucks were carried at actual cost.

As stated before, depreciation was carried at 3 per cent on the bulk plant. This was a new plant and there was no expense for paint and repairs. A higher rate of depreciation would have to be charged against frame or tin buildings, Mr. Fehr said, or if the ground were leased.

THE plant is located in fairly level country with roads paved and kept clear in winter. The maximum haul is 20 miles and the life of a truck is estimated at five years instead of four as is done where haulage is over rough country. With taxes, insurance, 20 per cent depreciation on trucks, plus actual expenditures for repairs and replacement parts, a charge of $5270 was made for distributing equipment. Item "g" covered stationery and incidentals as well as the things mentioned in the cost account published herewith.

The salary account was figured as if for an individual owner at $300 a month or $3600 a year. Truck drivers' wages were $125 a month apiece or $4500 a year for the three. A clerk received $125 a month or $1500 a year. Because the owner and clerk worked also for the service stations a part of their salaries was charged against the two stations.

Mr. Fehr said he had discovered that many Independent distributors get a great deal of pleasure out of their work; they never paid themselves salaries but only "touched" the till whenever they had to have a little money.

He explained that the advertising charge was low as he was striving to make a cost set-up that would represent the set-up of an individual or Independent jobber and had not included the proportionate share of his own company's national advertising. The "getting and holding business" item included entertainments, lunches, cigars and similar expenses.

He figures bad debts at only ¾ of 1 per cent, a figure that is below the average for the industry. The evaporation loss charge was the actual cost. The tax and insurance figure is an estimate because actual figures were not available when he made up this cost compilation.

The total bulk plant operating cost was $22,977 and 1,383,892 gallons of gasoline were moved through it during the year. This was an average of 1.66 cents a gallon, a figure considerably below the average bulk plant operating cost for these reasons given by Mr. Fehr:

C. B. FEHR

Who revealed to Ohio jobbers what it costs to market gasoline. Mr. Fehr is in the wholesale sales department of the Cities Service Oil Co. at Cleveland

"1. Location of plant, roads over which we operated, and length of haul.

"2. Fortunately we did not have to depend on the farmer trade for our gallonage. By that I mean that while you were bucketing off 25 or 50 gallons to the farmer trade, we were able to make compartment and full truck load dumps in the same given time, therefore expediting our delivery.

"3. We delivered 30.7 per cent or practically a third of this gallonage to two of our service stations located an average haul of a half mile from our bulk plant. This saved wear and tear on our trucks and expedited our deliveries."

Mr. Fehr urged the jobbers to take the items given as a basis for figuring their costs but not to take the figures he gave as indicators of their own costs.

GROUND for the two service stations cost $20,000 and rent at 6 per cent on this investment was charged to operating costs. The buildings of brick, with toilets, shelving, wiring and other permanent equipment, cost $5,000 each. Six per cent of the $10,000 cost was charged to operating cost. Equipment and installation cost $4000 or $2000 a station. Equipment for the two stations included five pumps and tanks, two cash registers, two desks and two chairs, two hydrants, three air towers, and two air compressors. Motor oil equipment was not included in the figuring which is to show the cost of handling gasoline alone.

The depreciation and maintenance charge against land, buildings, drives and installations was $2475. This was 5 per cent on the capital investment including that on the land because, Mr. Fehr explained, a premium usually must be paid for land when it becomes known a service station is to be built on it. This premium more than offsets any appreciation on the ground. Depreciation on equipment was 20 per cent and maintenance was at actual cost.

The salary charge included the salaries of five station salesmen and a proportional amount of owner's and clerk's salaries from the main plant. The other items, power, light, heat, bad debts, evaporation and temperature losses, and spillages were actual costs. The taxes and insurance item is an approximate figure.

THE total cost of handling 425,327 gallons in one year at two stations was $16,455 or 3.87 cents a gallon. This gallonage averaged 584 gallons a day a station. If each station averaged only 400 gallons, Mr. Fehr said the average cost a gallon would be close to 5½ cents.

In these times of wide margins, we are inclined to forget the days of the narrow margins which we have had in the past and which we will assuredly again have in the future, instead of holding our price and putting those extra dollars aside for the carrying of the business. There seems to be a general idea throughout the industry that now is a good time to go out and meet some of these low prices that others are offering and also to obtain additional gallonage.

Instead of applying good hard work salesmanship, quality and service to increase gallonage, the industry takes the cowardly stand and follows the lines of least resistance by cutting the price to obtain gallonage.

When you cut your price to obtain additional gallonage, it isn't more than 48 hours at the most that your competitors hear of these tactics and they either meet your quotations or if you have riled him up enough he is going you one better, and then the ball has started.

Your customers in the meantime who have been content to stay with you, hear of these lower quotations that you are making to this new prospective business, or your competitors make it a point of advising your customers what you are doing. Then you are immediately swamped with calls of dissatisfaction from these customers whom you have been charging a higher price and it is either necessary that you make them as good a price as you quoted to this new prospective business or lose their account. By this time you have succeeded in doing one thing and that is to cut an additional cent or two from your revenue.

Let's presume for easy figuring that you are doing a gallonage of 20,000 a week on a 5-cent margin, this gives you a gross profit of $1,000. Now by your

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actions of quoting this prospective business a lower price you have found it necessary to make a concession of 1 cent a gallon to your customers in order to hold their business, 20,000 gallon on a 4-cent margin is $800 or a net loss of $200. Now in order again to bring your gross profit back to $1000 on a 4-cent margin it is necessary that you sell 25,000 gallons a week or an increase of 5,000 gallons, and then while your gross profit is again $1000 it is costing you additional money to deliver this added gallonage and you have also taken on the added risk of having to carry these accounts so you are still a loser.

Now let's go back to your old customer, this concession that you have made to him of an additional cent starts him thinking, just how much money are you making on this business? Getting that extra cent from you wasn't so hard, there must be a big profit, and he wonders what price some other company would give him on gasoline.

You have now reached the point where you have made a shopper out of this customer, because any loyalty which he might have entertained for you in the past has been wiped out, due to your trying to gouge a higher price out of him for your product than you were quoting on this new prospective business.

The customer starts on his shopping tour, calling the various companies in his vicinity asking them to bid on his business, using the price of one company against the price of the other company working his price down lower and lower. And in practically all the cases the jobber or company takes the price that this fellow claims has been quoted him without investigating thoroughly to see whether it is the truth or not and passes it off by saying, well if so and so can offer him this price, I guess I can too.

In the majority of the cases where the customer or dealer is handling gasoline he is also handling some other commodity such as tires, accessories, ice, coal or various other items and inasmuch as he now has a 3, 4, 5 or 6-cent margin he thinks it would be a smart idea if he would cut the retail price of gasoline a cent or two to bring in additional customers and stimulate sales of his other wares. And then we have conditions as exist today.

The average motorist doesn't know from one block to the next just what the price of gasoline is going to be. The public takes all this and looks for more with no thanks to the fellow who gives a nickel or a dime of his profits away.

The public's version of the gasoline industry is that everyone connected with it is alternately a millionaire, profiteer, crook and a rogue, and the gasoline industry as a whole has no one to blame for this idea but itself. As we more thoroughly sell the public on this idea of theirs when the narrow margins come along and we find it necessary to return to the top selling price in order to try to weather the storm, they feel then that you have cut the price in order to get their business and now that you have them coming in to your station, you are just like the rest of the crooks and profiteers in the game and it leaves them with a rotten taste in their mouth.

You get no thanks for giving your profits away but let those lean times come along and you are not prepared or do not have the capital set aside to weather you through and find it necessary to hang up the old sign—"out of business" or your creditors find it necessary to appoint a receiver for your business. Then this self same public whom you have given your profits to will point you out with jeers and ridicule as being a failure and once a failure it is pretty hard to start climbing back up the ladder, because any company is going to hesitate to hire a man to look after their interests or money if he wasn't capable of handling his own.

Think it over—KNOW YOUR COSTS!

Significant Showings Promise New Fields

HOUSTON, May 19

Two discovery wells in different parts of the West Texas salt basin area are more important for their future significance than they are for present yields.

Buel & Hagan, drilling in sec. 8, block 604, Pecos county, found 25 feet of sandy lime at 2200 feet, where the hole filled up 85 feet with fluid, mostly oil. The test is about 24 miles west and slightly south of the Yates ranch pool, in eastern Pecos county, and about 35 miles east and slightly south of Fort Stockton.

The test, No. 1 McKenzie, is on acreage acquired by Buel & Hagan out of a 40,000-acre drilling block originally leased by Dixie Oil Co., Inc., subsidiary of Standard Oil Co. of Indiana.

No. 1 Harding, drilled by the Marland Oil Co. of Texas and the Texon-Group 1 interests, in Texas & Pacific block 33, sec. 19, township 1 south, is the first deep lime well to find production in Howard county. The well is still uncompleted, but with oil standing in the hole at the time it was swabbed it made 75 barrels in two hours from 3230 feet.

Laboratory examination of samples taken from the Harding well showed it to be producing from oolitic limestone, similar to the oil zone in the Big Lake field of Reagan county. In this regard, the Harding well discovery represents an extension of oolitic limestone production due north of Big Lake approximately 75 miles; the McElroy ranch and the Church & Fields (University) areas in northeastern Crane county, which also produce from oolitic limestone, are similarly 75 southwest of the Harding discovery.

The Westbrook and Iatan fields, about 25 miles northeast in Mitchell county, produce from lime levels that are not oolitic and which are found considerably lower in the geologic column; notwithstanding that drilling depths are from 250 to 300 feet shallower.

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A double meter outlet occupies the space of only one pump thus making for faster service. Extra gallonage sales naturally follow at no increased overhead.

The all metal cabinet painted in striking colors, offers attraction to passing motorists who know that by the SHARMETER their wants will be quickly taken care of.

The SHARMETER is also designed for use in brick, stone or concrete settings to harmonize with the architecture of any individual station.

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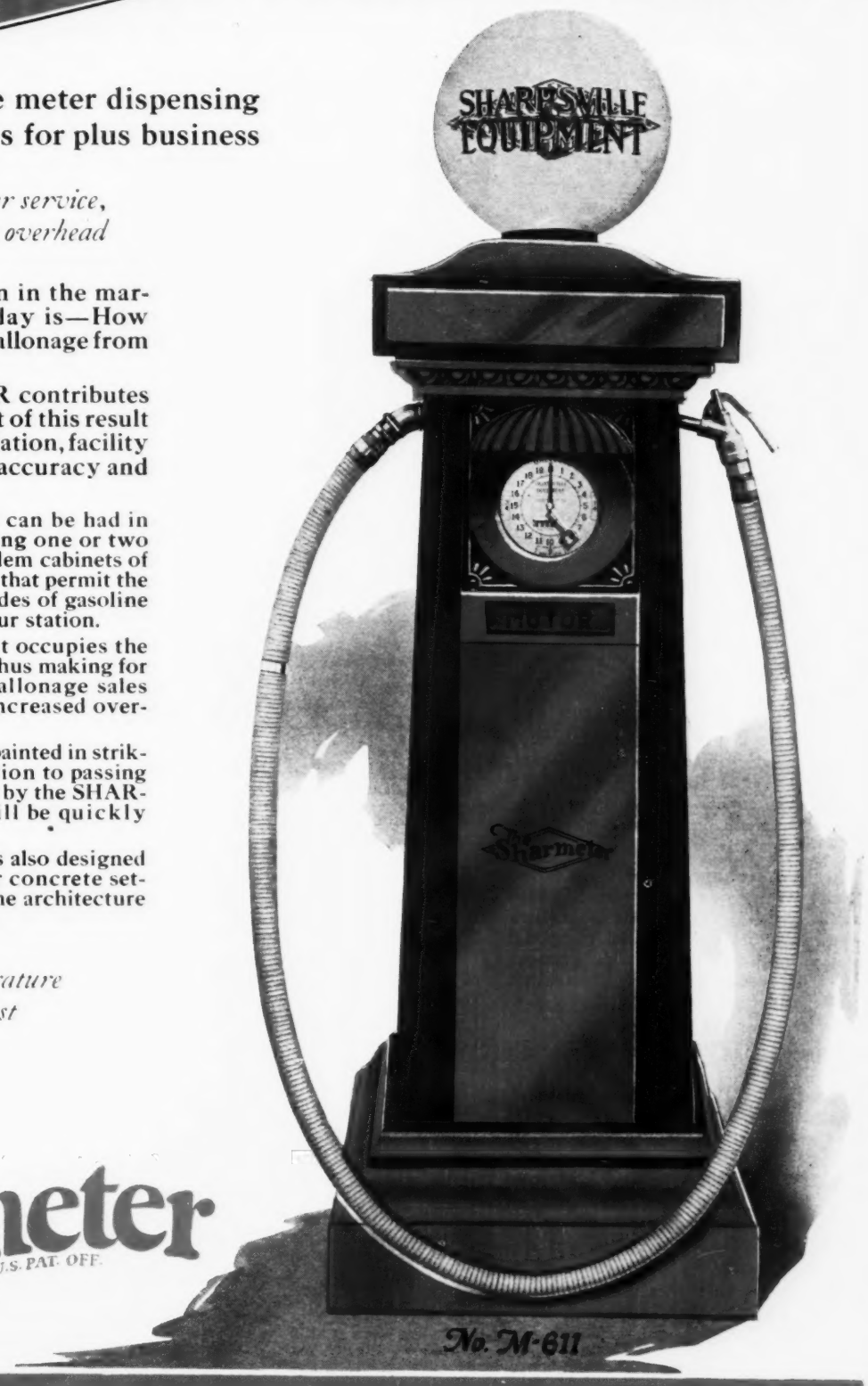

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Personal Contacts With Drivers Smooth Oil Field Truck Operations

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, May 21.—"AN idea," said R. F. Fike, "is powerful only when it becomes operative—a department is efficient only when it becomes cooperative."

Mr. Fike was repeating the words of a slogan that is lettered on a card on his desk. The card is not there to jostle his own memory—it is placed so that it can be seen by any of the 218 drivers and other employes who work in the motor transportation department of the Mid-Continent Petroleum Corp., of which he is the head.

These drivers and others see the card, for they have been encouraged to pay a call to this office whenever they are in Tulsa. No, not merely to the office, but to Mr. Fike.

From this it may be inferred that Mr. Fike considers the truck driver to be somebody of importance. He does. He has set up a system, some phases of which are original with him, of keeping the closest possible contact with the men who work under his supervision. This is based primarily on the recognition of the fact that on the attitude of the driver to his work and his company depends the successful functioning of the department.

"The transportation department is essentially a service department," said Mr. Fike. "Every department is desirous of improving its value to the company. We have found that in this department the human equation is the foundation of our building.

"IN the opening of an oil field, the rush is like the famous Klondike gold field stampede. We must get material, rigs and other equipment into the field with the greatest possible dispatch. This is where the pioneer of the oil field —the truck driver—shows his strong heart. Little thought is sometimes given to this man other than 'get all you can out of him, he is only a common workman,"

Our thought on this is materially different. We believe that by showing a human interest in these men, trying to get them to share the idea that their work in their position is as important as ours, that without them there is no necessity for us, a better spirit is established. And the place to keep this contact at the best temperature is right out in the fields on the trucks.

The head of such a department, of course, knows something about equipment, else he would not be the head. He has definite ideas on how the equipment should be handled and maintained. Mr.

R. F. FIKE
Head of motor transportation department, Mid-Continent Petroleum Corp.

Fike contends that the mere giving of instruction is futile unless the man who receives it is interested in and alive to the possibility of saving money for his employer—and it all resolves itself into just that.

"We who have had contact with the oil industry must all admit that the spending of money without consideration, was the too frequent failing of oil field workers," Mr. Fike said. "The expression, 'What the hell do I care, the company can stand it,' is passing into history as the invested capital of the many oil companies and the highly competitive conditions are calling for the elimination of all waste. New departments are being created, new systems installed, new men employed, all with one idea—to save the dollar the oil produces."

FIRST, then, Mr. Fike places the necessity of getting good men and getting them to work as a unit along the proper lines. Second, of course, is the mechanical end of the problem. Watching the equipment, catching all mechanical troubles when they first appear and by so doing eliminating the necessity of replacing still other parts that will in time be affected by the one that shows a defect, is a constant battle.

This is where the proper understanding between drivers and the department heads enters. The driver is, after all, the man that must watch the fitness of his equipment. Oil field hauling calls for long trips and much slow going and there is no opportunity for shop inspection for days at a time.

Just how has Mr. Fike gone about it to build the morale of his organization?

"When the department was organized," he said, "we found an appalling condition. Upon checking into the gasoline and oil consumed, for instance, we found that from $2 to $3 a day were being 'knocked down' by many drivers. We called in a number of the oldest drivers, questioned them on the irregularities we had found, and the truth came out.

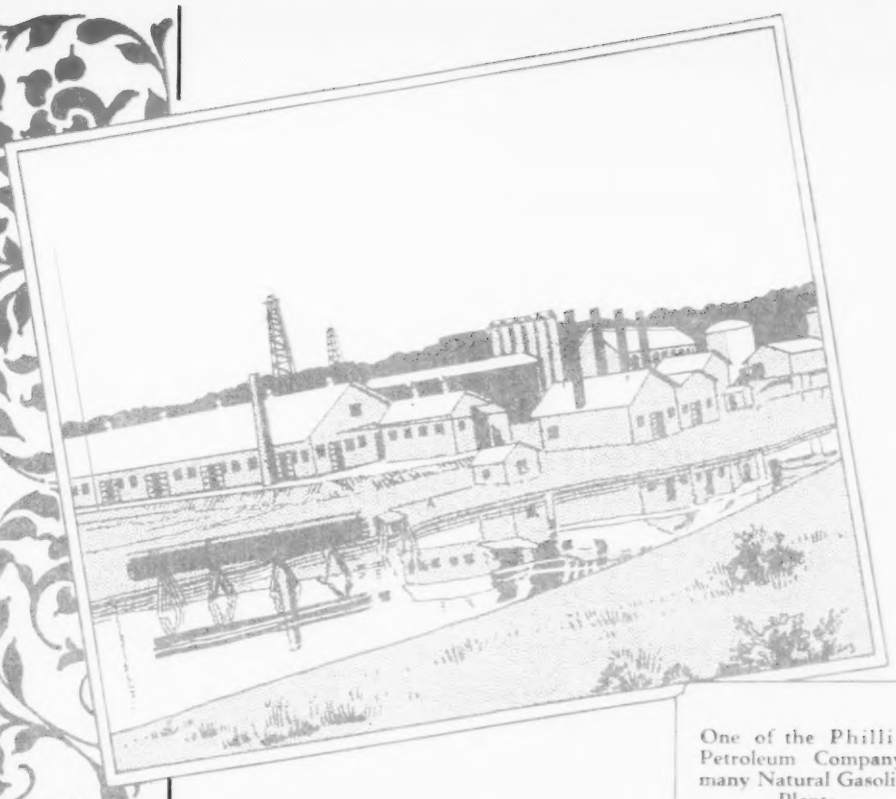
SEVERAL of them openly admitted their past practice in this respect. These were, of course, eliminated from the service of the company. Upon hiring men to replace them, we told the newcomers that we had an opening for the right kind of man, but that we were interested only in men who wanted steady jobs and we further told them just why their predecessors had gone. We made it plain that the short way out of an oil field job of today was to try to get away with crookedness.

"The fault was threefold: The company was not paying the men enough: the filling stations were to blame in writing the false receipts for oil and gasoline and remitting the overage in cash and the men were to blame in not telling the company that they had to have more money."

Getting back to the subject of close contact with the men: Mr. Fike has adopted the system of writting to every operator of automotive equipment once a month concerning cost of operating his truck for the past month and for the period of the year ended with that month. He also has a scoring system based upon 100 per cent, which is arrived at by all of the required reports reaching the office by the 10th of the month.

"Too often," Mr. Fike said, "monthly reports are required of men in the field and because they never hear anything further on them, they question their importance. We try to avoid this feeling by calling their attention each month to some item in the report which shows favorably or unfavorably to the subject of cost. I am glad to say that we usually find favorable things to say, now. The letters are not mere forms—they are personally dictated and signed by me.

"Helpful suggestion pays. Our men know that we are really acquainted with him, that we consider his interests along with those of the company and that we



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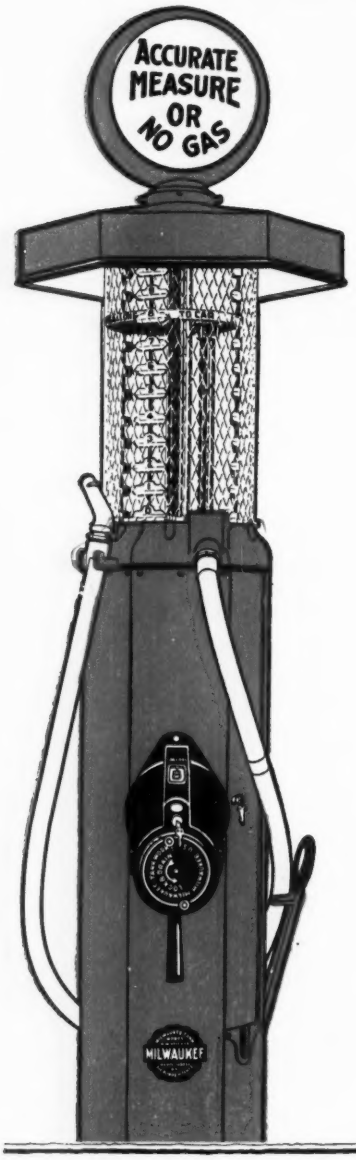

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Oil Price Handbook

RECENT crude and tankwagon price changes have caused many an oil man to study prices prevailing a year ago at this time.

What was Mid-Continent crude a year ago today? Or, what was 58-60 U. S. Motor gasoline in Oklahoma? Or, the tankwagon price of gasoline a year ago? These are some of the questions you are asking yourself right now.

You can get the answers most conveniently, rapidly and accurately in the OIL PRICE HANDBOOK for 1926. It contains the refinery, tankwagon, crude prices and export markets for the entire year 1926 as published in the weekly issues of National Petroleum News. 146 pages, cloth bound, marginal index—price $5. Send for your copy *today*.

NATIONAL PETROLEUM NEWS 812 Huron Road Cleveland, Ohio

appreciate the problems he has to meet in his field of activity.

"While we have a file of several thousand letters, I will make the broad statement that there are not more than five of them that could be termed unfavorable criticism and there are more than 100 pieces of equipment—nearly all trucks—under the control of this department."

Refiner Lectures Ohio Jobbers About Lubes

CLEVELAND, May 20.—C. O. Hoover, manager, research department, Deepwater Oil Refineries, Inc., Houston, is spending May in Ohio lecturing on lubricating oils before sectional clubs that are affiliated with the Ohio Petroleum Marketers' Association.

There are 17 clubs in Ohio, 16 of which have been organized since Dec. 1, last. The seventeenth club is the Cincinnati Petroleum Club of long standing, which takes in Hamilton county. The other clubs' territories include three or more counties each.

Active club members pay an annual fee of $5 and associate members $1. Each club pays a fee of $1 for a membership in the state association. Each club sends a representative to consult with directors of the state association at their monthly meetings in Columbus.

It is the intention of the state association to have each month a speaker to talk about some problem of great interest in the marketing division. In April C. B. Fehr, Cities Service Oil Co., Cleveland, discussed the cost of marketing gasoline.

W. A. Milne, executive secretary of the state association, said discussion of price fights or price conditions are barred from meetings because of the ill feeling such discussion might cause even though they complied with anti-trust laws.

LOS ANGELES, May 19.—Standard Transportation Co. (Standard of New York) has let contract to Radio Corp. of America for installation of the new and improved direction finders on all tankers operated by the company. Richfield of California recently installed the new direction finder on its tanker, Kekoskee. The new finder is said to be a great improvement over the older device.

CHICAGO, May 19.—George F. Fox, vice president of Henry H. Cross Co., Chicago, is in California on business for the company.

After being away from his office for the past year on account of illness Henry H. Cross, president of the Henry H. Cross Co. at Chicago has returned to his desk. Mr. Cross recently returned from a trip to Bermuda.

Crude Congestion in Panhandle As Tankage Fills Rapidly

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, May 21

STORAGE conditions are fast reaching the stage in the Texas Panhandle where it will be necessary to shut in wells, or pinch down production, until the crude oil congestion clears up.

This situation has been reached in the face of production declines averaging approximately 4.5 per cent weekly.

The Panhandle district reached its highest daily average production for the present year in the week ended Jan. 14, with 140,423 barrels daily. It dropped to its low mark of 1927 when, in the week ended April 8, it averaged 121,122 barrels daily. In the week ended May 6, the district averaged 134,922 barrels.

Full account had not been taken in the last period mentioned of the production capabilities of two wells on the Cockrell ranch, in block B-3, Hutchinson county, which made maximum flows at least equalling the largest completions in the Panhandle. These wells, which contribute to present crude congestion, include the No. 1 completion of Cockrell-McElroy, in sec. 1, which made in excess of 15,000 barrels daily, when cleaned out a week ago. The other was No. 2 McElroy Brothers, in sec. 4, which came in for 600 barrels an hour initial production, and was pinched to 400 an hour.

The Humble and Marland companies, which connected to the wells, were unable to handle all the oil for lack of storage room. The Dixon Creek Oil Co., which had about 275,000 barrels of room, laid a 6-inch field line from its tanks and provided some further relief.

Marland interests, with close to 1,800,000 barrels of Panhandle crude in storage, probably have little more than 700,000 barrels of room in the entire Amarillo territory. As their facilities include lease tanks and some storage room that is available only to certain parts of the field the tanks are in some cases remote from places where they could not all be readily used for purchased oil.

AS early as April 1, Humble had only about 300,000 barrels of storage room and stocks totalling in excess of 1,000,000 barrels. The Humble, however, has since started runs through its 10-inch carrier south to Comyn, Comanche county, establishing a 50-cent a barrel pipeline tariff from its Panhandle shipping base to its Texas City terminals, on the Gulf coast.

The Magnolia-Gulf system, connecting midway between the Panhandle territory and the Ranger district, is also running crude for these two companies. Although each company owns and operates its own end of the line, the connecting feature allows both to move oil through a recently completed system as against deferred operations that would have resulted had both undertaken to build their carriers clear through.

Gulf uses its line, except for Magnolia shipments, for the handling of crude produced on its own Panhandle properties. The Gulf is not a purchaser of outside crude in the territory, where at the beginning of April it had stocks of nearly 2,825,000 barrels, with storage room available of roundly 1,000,000 barrels.

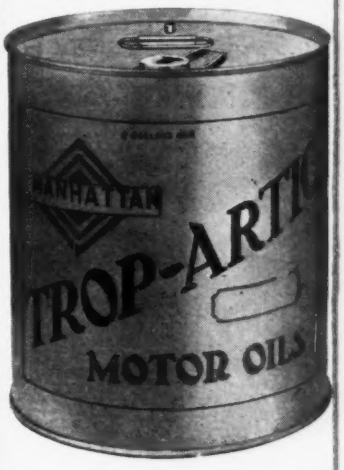
MAGNOLIA, an extensive buyer of Panhandle crude, had need for quick handling of such shipments as it could make. Its total stocks, April 1, amounted to 3,721,000 barrels; and some additions were made to supplies on hand in the succeeding period down to date.

At present, Magnolia is preparing to build 20 additional 55,000 barrel tanks at King's Mill, where it already has 71 55's full of oil. Magnolia also has two 80,000-barrel and nine 55,000-barrel tanks full at Borger, besides two "80's" of the Gulf, which are used in handling shipments at the north end of the Gulf-Magnolia system.

Phillips Petroleum Co., which has been producing about 28,000 barrels of crude daily in the Panhandle, has been able to ship only about 20,000 barrels daily; the remainder going to storage of its affiliated Bartex Pipeline Co. The Bartex now has approximately 2,750,000 barrels of crude in storage, with room limited to something less than 800,000 barrels at scattered points.

Prairie Pipeline Co., which has shipped some Panhandle oil in tank cars to Mexia for storage, will be prevented from operating its new Amarillo district pipeline immediately because of the necessity for using Oklahoma storage room to house other Mid-Continent stocks. The congealing qualities of Panhandle crude will also prevent filling the line with oil until the system is operated later. With more than a million and a half barrels of Panhandle crude stocks, the Prairie's storage room amounts to less than 600,000 barrels.

Figures for May 1 are not as yet available, but Panhandle crude moved to storage at the rate of about 70,000 barrels daily in April and the situation



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Your monogram or trade-mark can be printed on the baked-on enamel finish (any color) giving you a container that not only helps the sale but saves money in shipping.

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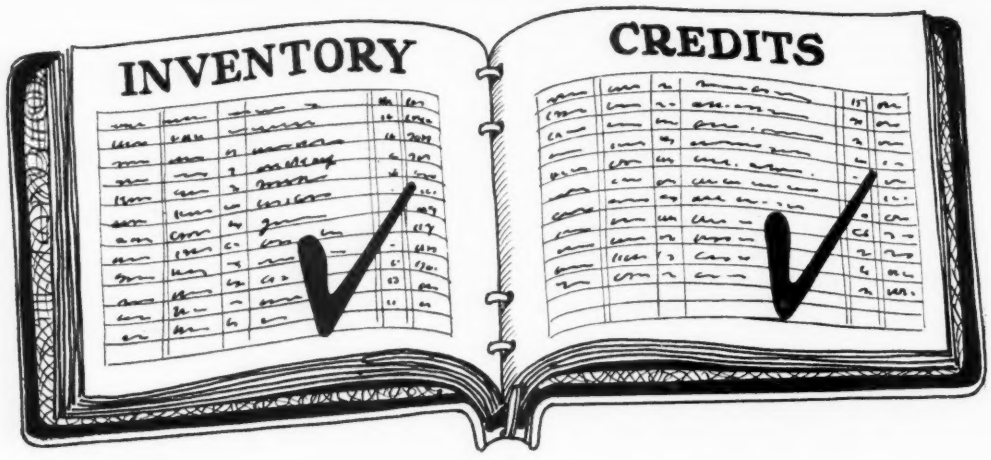

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as of the end of March is shown in the sub-joined table. The two columns show total steel storage capacity in the district of 21,563,000 barrels as against 7,211,583 barrels of room. The difference between the capacity and room figures gives the storage stocks on hand with the various companies.

Panhandle Storage Situation

Company	Storage Capacity in bbls.	Room 4-1-27, in bbls.
Atlantic	75,000	14,760
Bartex	3,340,000	1,079,037
Bell O&G	110,000	110,000
Champlin	114,000	108,488
Coble-Whittenburg	55,000	15,002
Derby	55,000	55,000
Devonian	110,000	70,354
Dixon Creek	515,000	286,537
Empire	275,000	160,034
Gulf	3,895,000	1,080,280
Herring-McIlroy	55,000	17,500
Humble	1,100,000	303,923
Japet Prod.	110,000	53,001
Magnolia	4,475,000	753,912
Marland	2,395,000	1,318,974
Midwest	110,000	29,950
PanTex	220,000	220,000
Plains	645,000	132,650
Prairie	2,099,000	670,158
Roxana	375,000	338,318
Sinclair	80,000	80,000
Skelly	1,155,000	313,705

No State Affiliations Sought By A. O. M. A.

CLEVELAND, May 20—Secretary J. A. Gilmore, of the Amefican Oil Men's Association, calls attention to a misstatement in NATIONAL PETROLEUM NEWS article on the meeting of Kansas jobbers, Page 30, May 18th issue, in which it is said that Mr. Gilmore "presented the aims of his association with the request that the Kansas association affiliate with them."

Mr. Gilmore says his association has not asked any state association to affiliate with it and never thought of doing so. The matter which was left to the decision of Mr. Carpenter and Mr. Motter of the Kansas association was whether the Kansas association should take part in a proposed meeting of officers of state associations with the American Oil Men's Association. This meeting is to suggest ways and means whereby the American Oil Men's Association could best serve the state associations and they in turn could cooperate with the state organizations.

Ask Data on Calibration of Tank Cars

NEW YORK, May 19.—It was decided at a meeting of the committee on calibration of tank cars of the American Petroleum Institute, held May 6 to enlist the help of users and manufacturers of tank cars in developing a standard method of calibration. Dr. R. P. Anderson, technologist of the Institute and chairman of the committee requests those who have developed methods of calibration either by computation from the tank measurements or by measuring the quantity of water required to fill the car, to send them in to him at 250 Park Ave., New York City.

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Properly coated with NO-OX-ID, buried tanks and pipe lines will give 100% longer service than if left exposed to rust. This we guarantee even under the most severe conditions.

NO-OX-ID prevents this action, and if applied when reconditioning or making new installations, rust has no chance to start.

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TULSA, OKLAHOMA

Changing Motor Oil Every 500 Miles Urged as Reasonable Precaution

By Ward K. Halbert
N. P. N. Staff Writer

CHICAGO, May 20

DESPITE the improvements in the latest motor cars, changing motor oil every 500 miles is still regarded as cheap insurance against trouble. Filters to keep out impurities and breathers to exhale the dilution in vapor form are improvements, oil men acknowledge. These devices give the motorist an improved measure of safety and probably will tend to lengthen the life of his machine, they think, but should not be offset immediately by carelessness on the motorist's part.

In a technical paper read before the recent convention of the American Oil Men's Association in Chicago, Robert Bruce White of the Valvoline Oil Co., pointed out that some of these devices, for which much has been claimed, have failed in a number of cases to do any good. Other oil companies have renewed their efforts this spring to persuade their customers to continue changing their oil every 500 miles. Among them is the Shaffer Oil & Refining Co.

Without casting any aspersions upon the attainments of the motor manufacturers, or the manner in which these improvements have been advertised, oil men are finding a sentiment in the trade that motor oil in 1927 should last longer than it did last year. They think the sentiment is largely a result of loose talk stimulated by the advertising, and unjustified claims made by proponents of certain brands of oil. All have combined to build up a sales resistance which the service station man has to meet.

Shaffer Oil & Refining Co., among other oil distributors, is fortifying its employees with educational data for the consumer. They are "rubbing in" the doctrine that no oil (however good) is proof against gasoline dilution and dust contamination, and no owner of a car can afford to take chances on inadequate lubrication. One piece of Shaffer's literature, written by A. M. Honnet, says in substance:

"When a man advises you to run your car 1000 miles without a change of oil, ask him to guarantee your motor against the possible results—it is your motor and not his!"

The document written by Mr. Honnet as "Deep Rock" advertising is entitled "The Truth About Automobile Crank Case Draining" and is couched in everyday English. It is interesting as the following abridgement will show:

Mr. Honnet Says:

Crank cases of automobiles receive road dust through the breather pipe. This cannot be prevented. The under side of the pistons act as pumps, drawing in outside air and expelling it. This air, laden with dust in many cases, gives up its dust to the crank case oil and soon it is unfit for use as a lubricant. It should be drained out and replaced before this point is reached.

"ANOTHER source of sand in the crank case is the air injected by the carburetor to make an explosive mixture of the fuel. The air is taken from under the hood, drawn in by the cooling fan. Only look at the blades of the automobile fan to judge whether the air is dust laden. The air enters the explosion chamber along with the gasoline, the dust does not, but adheres to and contaminates the lubricating oil on the cylinder walls. It is washed down into the crank case and stays there accumulating until it is drained out.

"Water is one residue from each explosion of a mixture of gasoline and air. Every two atoms of hydrogen in the gasoline combines with an atom of oxygen from the air to form H_2O, which furnishes part of the energy of the explosion. Where the walls of the cylinder are below 212 degrees F., part of this water condenses and finds its way into the crank case further to contaminate the oil and render it useless as a lubricant. It should be drained out before this point is reached.

"Crank case lubricating oil is also contaminated with unburned gasoline. Every time a cylinder misses, the gasoline is unburned and if the engine is cold, as it often is when it misses fire, the gasoline is condensed and goes the route of all other foreign matter in the cylinder, ending up in the crank case. The same thing happens to the heavy ends of some of the blended motor fuels offered to the public under the name of gasoline.

"Some of these blends are a mixture of naphtha and absorption gasoline. The naphtha often fails to burn and finds its way into the crank case to thin the lubricating oil beyond the point of usefulness. It should be drained out and replaced before this happens, else it might be necessary to replace a cylinder block or pistons instead of merely a crank case full of lubricating oil.

"Another by-product of the necessary explosion in an automobile cylinder is carbon or lamp black. A great many motors, regardless of the kind of lubricating oil used, have a way of depositing carbon in and around the cylinder walls.

"THIS carbon comes from incomplete combustion of the carbon atoms of the gasoline. Some of this carbon cakes and adheres to the cylinder walls, piston heads and valves, until it is burned or scraped off; and some of it forms carbon dust or flakes and is washed into the final resting place of all foreigners who enter the automobile cylinder—the crank case. If left to accumulate, it will ruin the lubricating oil. It should be drained out, along with the oil, before it becomes a menace to the life of the motor.

"Then there's old iron oxide always in evidence where iron and water are intimately associated. The water in most gasoline rusts the inside of tanks and carries the rust in suspension to the haven of the other enemies of lubrication, the crank case, which has a habit of holding fast to all it gets, until a kind-hearted owner drains out the lubricating oil.

"Experience, that grand old authority for most rules of conduct, has taught automobile owners, makers, designers, operators and doctors, that in ordinary usage, 500 miles is as far as it is absolutely safe to drive a car before removing the accumulated contaminators of lubricating oil from the crank case.

"Under some conditions, frequent stopping and starting in cold weather or heavy driving on dusty, sandy roads, the draining should be done oftener than 500 miles. And again in some cases where there is smooth, light driving on paved streets, with even motor temperatures and infrequent stopping, it might be safe to drive 10,000 or 15,000 miles.

"But rather than to try to use the contents of your crank case up to the

Auto Accessories Held to 15 Items

AN Indiana jobber works accessories successfully in connection with his gasoline and oil business at his stations in small towns, by limiting his list of items carried to the few he found through his former experience gave him a frequent turnover and at the same time met most of motorists' demand.

The full list and the story of how he picked it out of some 1500 items all told among auto accessories, and how he handles this class of business in general is to be told in a special article by W. K. Halbert, staff writer, in June 1st issue of National Petroleum News.

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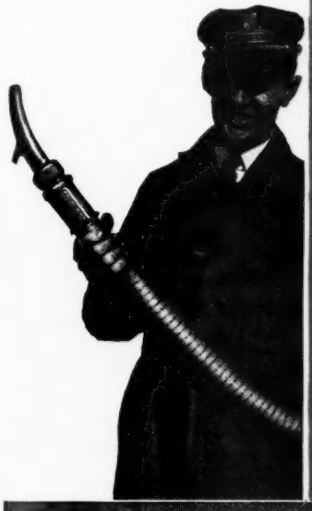

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BOSTON: 142 Berkeley St.
PITTSBURGH: 341 Second Avenue
CLEVELAND: 1302 Ontario Street, North
DETROIT: 5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY: 13th Street and Eastern Ave.
CHICAGO: 1213 West Washington Blvd.
SAN ANTONIO: 1401 South Flores Street
HOUSTON: 700 N. San Jacinto Street
EL PASO: P. O. Box 599
NEW ORLEANS: 205 South Peters Street
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DENVER: 4800 York Street
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limit of its serviceability; rather than see how close to the edge of the precipice you can run; rather than load the elevator or bridge to its full capacity; rather than let your watch run until the pull is all gone from its spring; rather than wait until you are starving before you eat, or dirty before you bathe, we advocate a daily bath, thrice daily meals, winding your watch each 24 hours, although it will run full 36, keeping well within the factor of safety of elevator loads and keeping a respectful distance from the edge of the precipice, and say —Drain your crank case every 500 miles. If you don't it may cost a motor.

"If anyone recommends that you run your oil longer than 500 miles, do so only if they will assume responsibility of the risk. It is your motor you are endangering, and as long as it is at your risk, play safe. Drain your crank case at least each 500 miles.

"When someone discovers a lubricating oil that will assimilate sand and water and gasoline and kerosene and carbon and iron rust, without injury to its lubricating quality, then that oil might run 1000 miles in an automobile crank case. But until then, caution is the better part of economical automobile lubrication. Drain your crank case at least every 500 miles and you will be reasonably sure of safety."

Piston Travel is Four to One

LOS ANGELES, May 19.—Lawrence T. Wagner, lubrication engineer of the Standard Oil Co. of California, told the southern California section of the Society of Automotive Engineers at a recent meeting that the pistons in a four-cylinder, five-ton truck travel four miles up and down for every mile the truck travels in high gear and that the piston wall area of the engine is more than 300 square inches. It is desirable to operate engines at comparatively high temperatures, he said, in order to reduce the fluid friction of the oil.

It is advisable, Mr. Wagner said, to use an oil that will form the minimum amount of carbon and carbon of such a nature as not to injure the bearing surfaces.

ESTHERVILLE, IA.—A special offer to Ford owners as an opening day attraction at the service station of the Johnson Oil Co. here was a five-gallon can of non-chatter medium oil for $3. To drivers of other cars one quart of oil or one pound of grease with every $1 purchase was given free. The company handles Deep Rock gasoline, Northland motor oil and Pennoyl oils and greases.

ROCHESTER, MINN.—The Hart Oil Co. gave away as an opening day attraction at its new filling station here a ticket with every $1 purchase entitling the holder to two to 10 gallons of gasoline free.

The station is equipped with wash and grease rack. Customers' cars are called for and delivered for this service by the company.

Wells' Output Can be Increased by Proper Cleaning Out Methods

By Lester C. Uren
Professor of Petroleum Engineering, University of California

Part 2

In the preceding article of this series,[1] the nature and manner of formation of the various types of well accumulations were explained. It was shown that the problems of sand, paraffin and precipitated salt accumulation are of common occurrence in many oil fields, and that unless means are adopted to prevent their formation or to periodically remove them when formed, they may seriously impede the flow of oil into the wells. The present article will be devoted to a review of the methods employed in removing or preventing the formation of these detrimental accumulations.

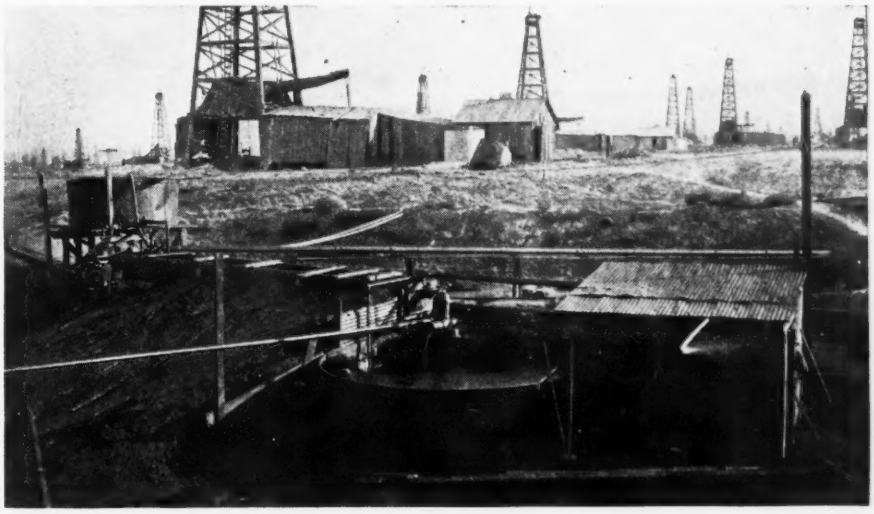

Fig. 1—Sand-settling and oil-heating equipment used in preparing oil for flooding wells (Photo by Souverkrop)

WE have seen that the accumulations of detrital material in wells consist, for the most part, of sand detached from the main body of the reservoir rock and swept toward and into the wells by the flowing oil and gas. Voids so formed within the reservoir sand, may permit caving of over-lying bodies of shale or other impervious material, which clogs the casing perforations and screens and prevents access of oil to the wells. If these detached fragments of sand and shale are prevented from entering the well, they will accumulate against the screens and in the surrounding wall rocks. If they are permitted to enter the well, they gradually accumulate in the bottom and restrict flow of oil from the reservoir sands unless continually removed with the oil, or by periodical bailing. More detailed explanation of the manner of formation of these accumulations is to be found in the earlier article to which reference has already been made.[1]

The methods that may be employed in removing sand and silt accumulations from wells, will depend upon their nature and location. If the well is lined with screen or perforated pipe and the detrital material is accumulated outside of the liner or screen, the situation may be remedied by a process of washing, flushing or circulating with oil or water through the perforations; or, if the liner can be raised, it may be withdrawn to the surface for cleaning, the loose material outside of the pipe being permitted to fall into the bottom of the well, whence it is subsequently bailed.

Souverkrop[2] has described the methods of cleaning wells with fluids, as used in the California fields where the sands are relatively unconsolidated, so that they cave readily against the well liners, generally preventing their easy removal. Four different methods are employed, to which the terms "flooding," "washing," "circulating" and "hydraulicking" are applied. The choice of one or another of these methods depends upon the nature and location of the accumulated material and upon the physical conditions surrounding the well in which the work is to be done.

Flooding with Oil

SAND and silt accumulations against the well screens and perforations, may be removed by the "flooding" process. In this method, crude petroleum is run into the oil string, either at the casing head or through the tubing, until sufficient fluid pressure is developed against the inside of the screens and perforations to cause the fluid to break through. Momentary reversal of the direction of flow through the perforations, will dislodge much of the material packed against the outside of the liner, and if the productive formation is coarse-grained, has a high porosity and is under low pressure, a sustained flow of oil from the well, through the perforations and into the oil sand may be established.

A common method of flooding involves lifting the standing valve and plunger from the working barrel of the pump, thus allowing the oil in the tubing to run back into the well. If a packer is placed between the tubing and the oil string above the perforated pipe, additional oil may be pumped down from the surface and pump pressure brought to bear against the inside of the perforated pipe. Pumping is promptly resumed after flooding, in order that such sand and silt as may be churned into suspension in the oil will be removed before it has time to settle out.

Though widely used, it is thought that this method of removing well accumulations will ordinarily not be as effective as the "washing" and "circulating" and "hydraulicking" methods to be described below. The flooding method however, is comparatively inexpensive and simple in application. The time required to flood a well is often less than an hour. If additional oil is pumped into the well at the surface, 50 barrels of fluid will ordinarily be sufficient and this is promptly recovered when pumping is resumed.

Where accumulations of solid hydrocarbons are to be attacked, it is preferable to heat the oil used in flooding, as the solubility of waxes and semi-solid asphaltic substances in crude petroleum increases with the temperature. If the method is to be used as a means of removing sand, on the other hand, better results are secured by using cold oil, since the sand remains longer in suspension in an oil of high viscosity. Also, if the "formation" takes oil readily from the well when pressure is applied, less

[1]See National Petroleum News, issue of May 11, 1927.
[2]Souverkrop, L., "The Use of Fluids in Cleaning Oil Wells," Summary of Operations, California Oil Fields, Vol. 9, No. 7, Jan., 1924. (Published by California State Mining Bureau.)

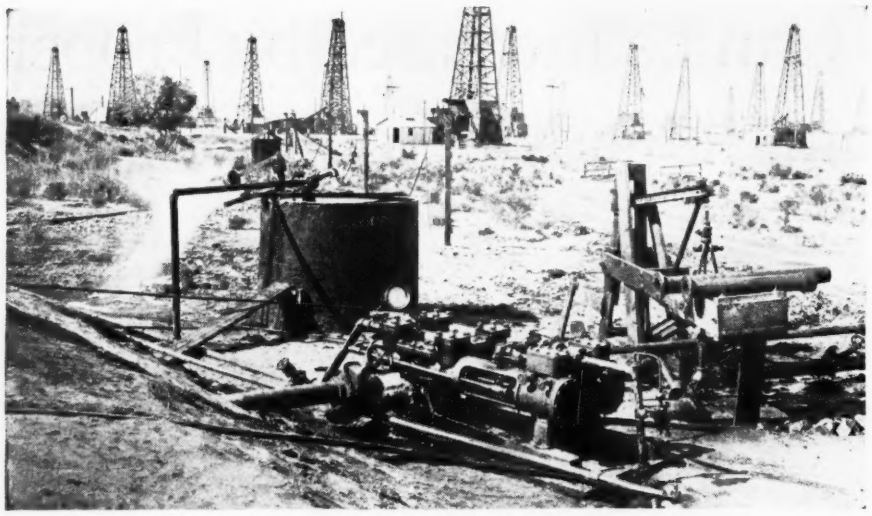

Fig. 2—Small tank and oil-transfer pump used in handling oil in flooding wells (Photo by Souverkrop)

of a very viscous oil will enter the sand than is the case with an oil of low viscosity.

THE equipment used in flooding may be simple in character. A sand-settling tank, sump or trough must ordinarily be provided, and if the oil is heated, a separate tank equipped with steam coils will be desirable. An oil transfer pump of ordinary type will also be necessary in most cases. The photographs reproduced in Figures 1 and 2 illustrate the type of equipment used on a property in the Midway Field of California. Another operator uses the concrete-lined sump illustrated in Figure 3, as a container for oil used in flooding. The sump is equipped with sloping sides to facilitate the removal of sand with hoes, and a steam coil in the bottom permits of heating the oil before it is pumped into the near-by wells.[3]

The effect of periodical flooding of wells on the volume of production, is often marked. A typical case is one in a California San Joaquin Valley field, in which two rows of 14 wells each along a property line are operated, in one case with periodical flooding, and in the other case, without flooding. The wells which are regularly flooded produce an average of 34-barrels per day, while those not flooded average only 9-barrels. The additional cost of production due to the expense of flooding, is said to be slight. Figure 4 shows graphically the effect of flooding in increasing recovery and ultimate profit on a California oil-producing property.[3]

Pressure Washing With Oil

A SOMEWHAT more effective and positive method of cleaning well screens and perforations than the flooding process described above, involves washing with a jet of oil direct against them from within. The method is applied either with the aid of a special foot-piece which is attached to the lower end of the well tubing, below the standing valve of the pump, or with a washing nipple operated between a pair of swabs suspended on the tubing. Oil forced down through the tubing under pump pressure, issues through the washing tool as a jet and is applied directly against the pipe screens and perforations, dislodging the detrital material lodged within them, and disrupting the "blanket" of loose material accumulated around the outside of the liner. The tubing on which the washing tool is suspended within the perforated pipe, is raised, lowered and turned, until the jet is brought directly against all parts of the perforated pipe.

Figure 5 illustrates the type of washing tool used as a permanent part of the plunger pump assembly in a pumping well. The jet-washing tool is screwed to the extension shoe of the pump and provided at its lower end with a swaged nipple supporting a second plunger-pump extension shoe, somewhat smaller than that of the pump above. Ordinarily the lower extension shoe is not equipped with a standing valve, the entire assembly below the pump proper functioning as a gas anchor. When it is desired to flush the perforations, the sucker rods and standing valve of the pump are first withdrawn. The rods are then again run in with a standing valve designed to fit the extension shoe below the washing nipple.

This valve, being of smaller size than that of the pump, passes freely through the upper shoe. The tubing is then lowered until the washing nipple is opposite the lower-most perforations, and oil is pumped down through the tubing from the surface. Washing continues as the tubing is turned and slowly raised until the washing nipple has reached the upper-most perforations. Many special forms of perforation washers have been designed for use in a similar way, but space does not permit of their description.[4]

FIGURES 6 and 7 illustrate the second type of perforation washer, which requires removal of the rods, tubing and pump, and reinsertion of the tubing with the washing tool attached at its lower end between two packers or swabs. This form of perforation washer is designed to isolate a short section of the perforated pipe, so that pressure may be applied against it from within, providing positive fluid pressure in addition to the jetting action, in case the jet is not successful in dislodging the detrital material. Circulation may thus be established through all sections of the perforated pipe, and the detrital material about the pipe dislodged. Certain more elaborate washers of this type are equipped with valves designed to permit of rapid insertion or withdrawal of the tool from the well, or of releasing the fluid from within the tubing when it is unable to force an outlet through the perforations.[5] Another still more elaborate washing tool embodies a small turbine which operates a jarring or rapping mechanism designed to aid in loosening silt accumulations behind the pipe.[6]

[3]Souverkrop, L., "The Flooding Method of Cleaning Oil Wells," Oil-Field Engineering, November, 1926, Vol. 1, No. 3, pp. 37-42 and 88-89.

[4]For a detailed description of the various types of perforation washers, the reader is referred to a paper by Mr. L. Souverkrop entitled, "Correct Methods and Uses of Perforation Washers in Cleaning Wells," printed in the February, 1927, issue of "Oil-Field Engineering (Los Angeles), Vol. 2, No. 1, pp. 17-22, 43-44.

[5]Schofield, F. N., Patent No. 848,501. (1907). Halliday, A. L., Patent applied for in 1922.

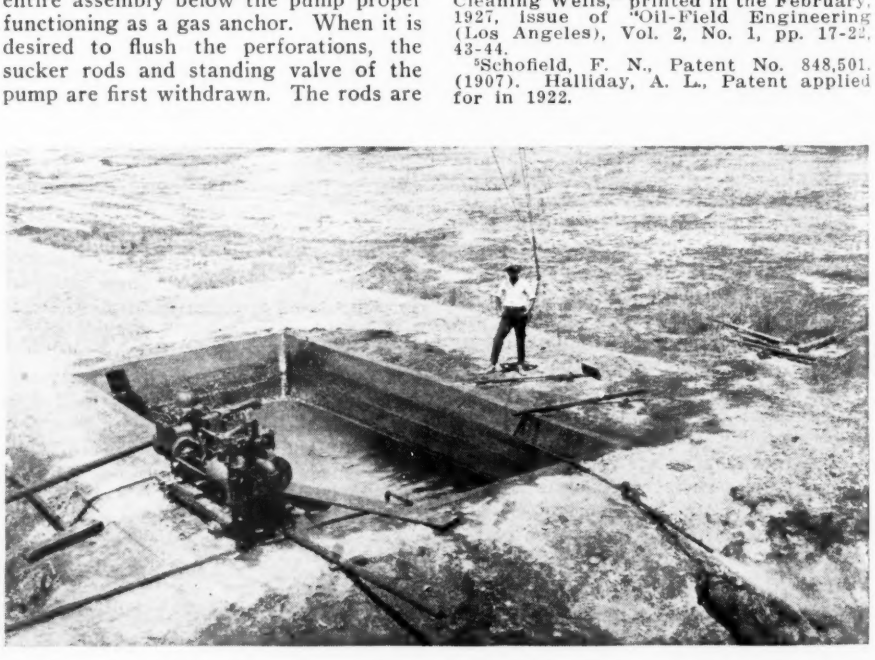

Fig. 3—Concrete-lined sump used in preparing oil for use in flooding wells (Photo by Souverkrop)

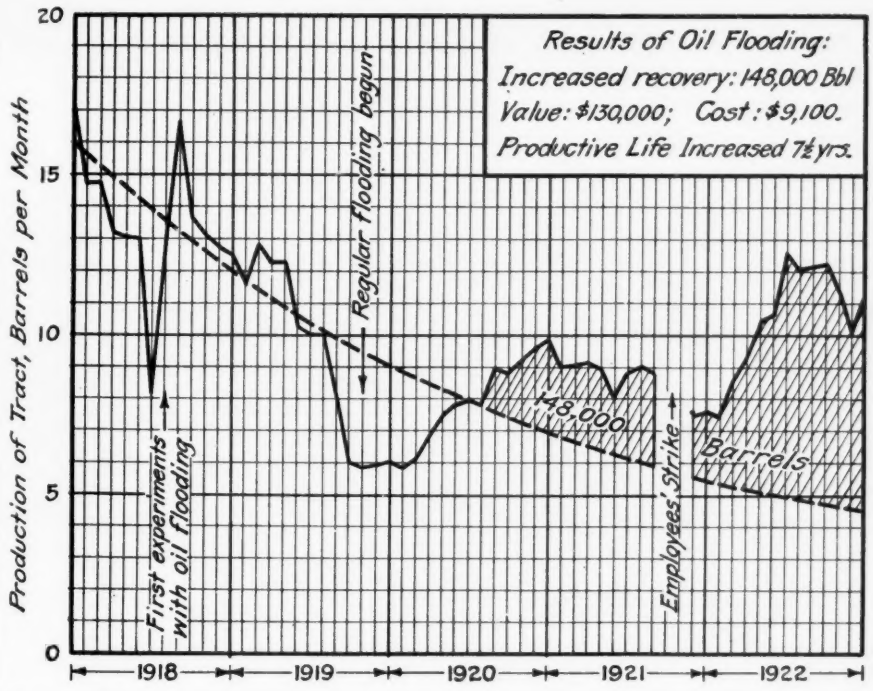

Fig. 4—Graph showing effect of oil flooding in increasing the recovery of oil from a San Joaquin Valley, California, property (After L. Souverkrop)

This method of washing requires less oil than is necessary in flooding, 25 barrels being sufficient to wash 300 feet of perforated pipe in a 1000-foot well. The entire operation consumes less than eight hours. The oil may be preheated if desired, and other fluids, such as water, distillate or gasoline may be used if conditions justify. Costs vary from $5 to $100 per well washed. Individual well productions have been increased by several hundred per cent in some instances, through application of the pressure-washing process.

Circulating With Oil

ACCUMULATION of sand within a well often results where more sand enters than the accompanying oil is able to retain in suspension. In such a case, if the pump in use is able to handle the additional oil, a part of the production may be continually returned to the well through the space between the tubing and casing. The additional quantity of oil thus supplied is often sufficient to keep the sand and silt in suspension, so that it may be removed by the pump.

The carrying capacity of oil for sand increases with its viscosity, and viscosity may be controlled to some extent by varying the temperature. We might circulate hot oil through the well with the purpose of transmitting heat out into the productive sands, reducing the viscosity of the oil in the vicinity of the well and thus reducing the amount of sand that the oil may carry into the well. Incidentally, reduction of the oil viscosity within the critical region of high velocity about the wells, will reduce the sand resistance to flow, and should bring about an increase in the rate of production, as well as increased ultimate recovery.

Instead of heating the circulating oil, we might adopt the alternative plan of circulating cold oil of higher viscosity than that which the well produces, with the purpose of increasing the carrying capacity of the oil for sand which has already entered the well. The former plan would appear to be preferable, if the oil can be heated at moderate cost, in view of its probable additional advantage in reducing sand resistance, and particularly if the oil carries paraffin which may tend to deposit in the wall rocks.

THE arrangements necessary for circulating are simple in character. The lead-line from the well discharges into a small receiving tank in which the sand lifted by the pump with the oil settles out. If it is desired to heat the oil returned to the well, the tank will be equipped with steam coils. A second pipe-line returns a part of the oil to one of the side outlets of the casing head, a regulating valve being provided to control the rate of flow. If the well is producing under back-pressure, it will be necessary to force the oil into the casing under pump pressure or under a suitable head from an elevated tank.

The photograph reproduced in Figure 8 illustrates typical arrangements at the casing head for circulating.[7] The small stream of oil discharging into the open end of the upright tubing at the right of the casing head, in the photograph, flows continuously through a U-shaped pipe trap (partly below the derrick floor) into one of the side outlets of the casing head. The trap in this case, permits of carrying a moderate vacuum on the well. This small stream of oil is sufficient to keep sand in the well in suspension so that cleaning out is seldom necessary,

[6]Dickenson, W. E., Patent No. 1,333,390. (1920).

[7]Souverkrop, L., in "Oil-Field Engineering," May, 1927.

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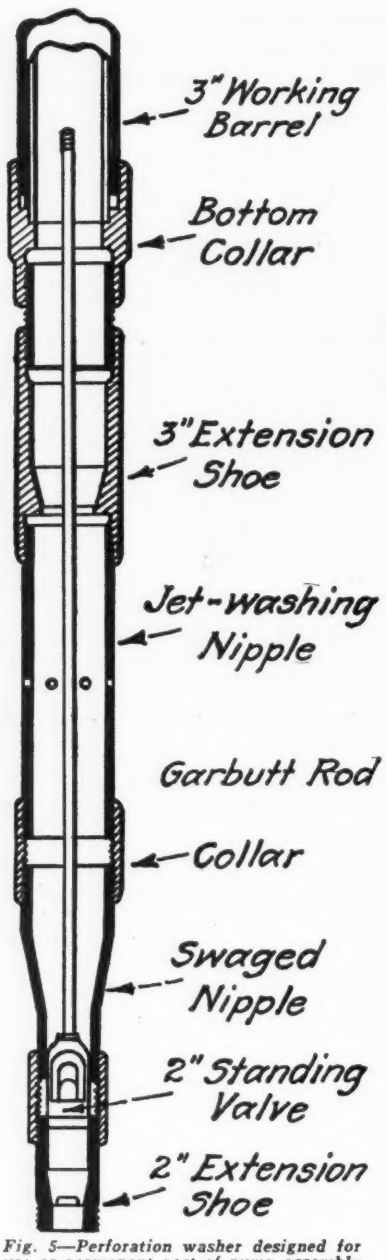

Fig. 5—Perforation washer designed for use as permanent part of pump assembly (After L. Souverkrop in "Oil-Field Engineering")

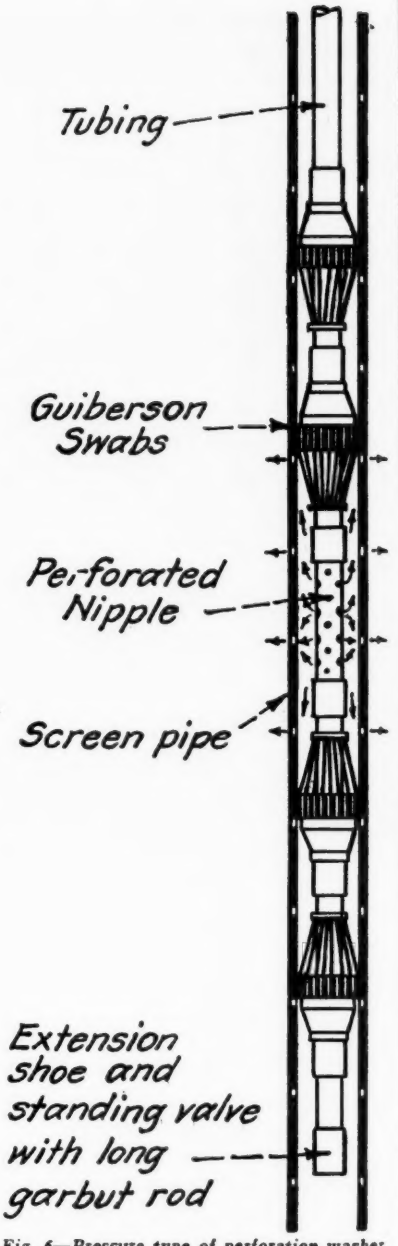

Fig. 6—Pressure type of perforation washer, utilizing Guiberson swabs (After L. Souverkrop in "Oil-Field Engineering")

whereas before use of the circulating process, sand accumulation was a source of continual annoyance.

For best results in circulating, the tubing and pump should be placed as near the bottom of the well as other conditions will permit. The volume of oil to be circulated through the well can only be determined by trial, but is frequently as much as a third or a half of the well's production.

The advantage of the circulating process in reducing time lost in cleaning wells, is illustrated by the case of two adjoining properties on one of which the process was used, while on the other it was not used. Over a period of six years, the property using the process had an average time lost per well per month of less than one day, while the neighboring property lost in excess of five days per well per month in cleaning wells.[8]

Mr. W. J. Knox gives results obtained by continuous circulating with hot oil. Oil returned to the well is in this case, heated in a gas or oil-fired heater to a temperature of from 300° to 450° F., and returns to the surface with a temperature of from 110° to 150° F. In a group of old wells in Alleghany County, New York, production was increased by this treatment from 7-gallons per well per day, to a sustained rate of 35-gallons, at a fuel cost of only 10.8-cents per barrel. Other costs incidental to the process were comparatively small. The beneficial result in this case, was attributed to removal of accumulated paraffin from the sands in the immediate vicinity of the wells, but it was at least partially due to decrease in the sand resistance to flow as a result of reduc-

[8]Knox, W. J., "Cleaning Oil Wells by Heated Oil," Transactions, American Inst. of Mining & Metall. Engineers, See "Petroleum Development and Technology in 1925," pages 174-178.

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Fig. 7—Pressure-washing device utilizing simple form of packers (Photo by L. Souverkrop)

tion in oil viscosity. In a group of old wells in the Mid-Continent Field, near Coffeyville, Kansas, producing asphaltic oil, hot-oil circulation increased the rate of recovery from 34-gallons per well per day to 85-gallons.

Hydraulicking Sand Accumulations From Wells With Oil

MR. SOUVERKROP also describes[9] the use of hydraulic force as a means of removing sand and silt accumulations within wells. The hydraulic process is here used as a substitute for bailing. In the application of this process, the pump, sucker rods and standing valve are withdrawn from the well and the tubing is lowered until it is in contact with the top of the accumulated sand. The upper end of the tubing is then connected with flood lines and oil or water (preferably the former, unless the sand to be removed is water-wet) is pumped down the tubing with sufficient pressure and in sufficient volume to loosen the accumulated solids and churn them into suspension in the fluid. A jet-washing tool may be attached to the lower end of the tubing if desired.

The tubing is lowered as the work proceeds, until bottom is reached and all of the solid material is in suspension. The rods, standing valve and plunger are then quickly replaced and the sand-laden fluid pumped out. If the fluid in the bottom is heavily laden with solids, is is preferable to raise the pump for a short distance off bottom to prevent it from becoming clogged with sand. If the formation does not absorb oil from the well too rapidly when high pressure is applied, and sufficient oil is available to establish circulation back to the surface outside of the tubing, the sand may be circulated to the surface after it is churned into suspension by the hydraulic process. Cold oil is preferable for hydraulicking to hot oil, because of its greater viscosity. If the well to be treated produces an oil of low viscosity, it may be desirable to make use of a more viscous oil from another source, if it is conveniently available.

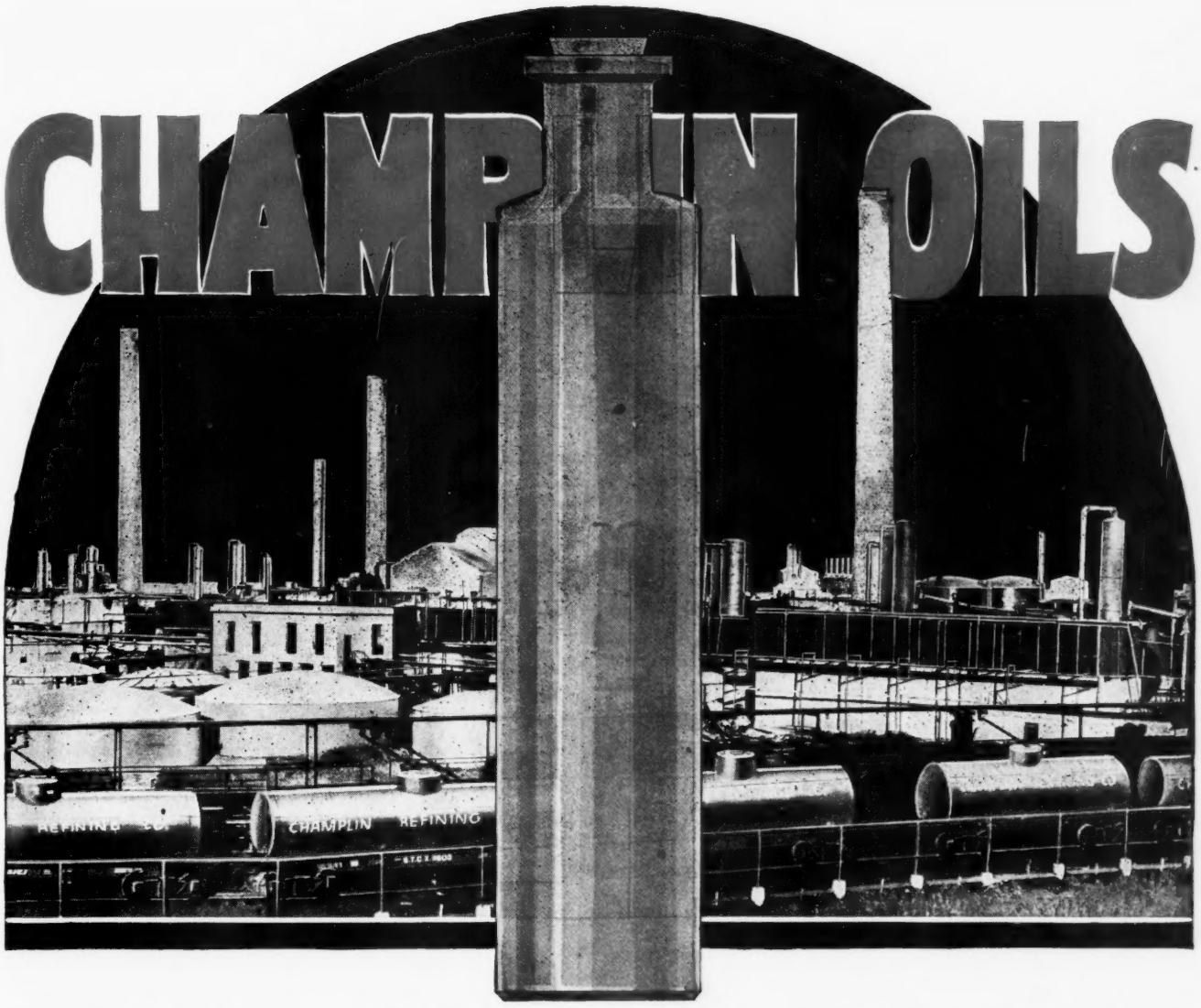
The photographs reproduced in Figures 9 and 10 illustrate equipment used in hydraulicking sand accumulations from wells in the Kern River Field of California.[3] Here a group of operators of small leases have purchased equipment for cleaning their wells, which is moved about to various wells as needed and used on a cooperative basis. A 35-barrel oil tank mounted on a motor truck is used in lieu of a permanent tank at each well, and where pump pressure is required in forcing oil down into the wells, a high capacity pump, mounted on a tractor, is employed.

Blowing Sand Accumulations From Wells with Compressed Air or Gas

A SOMEWHAT similar process to the oil-hydraulic process described above, has been developed by I. L. Dunn and used with great success in many wells in the Marietta, Ohio, district. In this process, compressed air is used instead of oil as a means of dislodging the accumulated sand and removing it from the wells.[9] The Tidal Oil Co. has also made successful use of compressed air as a means of blowing accumulated detrital material from wells in the Oklahoma oil fields.[10] In the latter case, portable air compressors, compressed-air receivers and well-pulling equipment is employed, being moved about from well to well as needed. The rods and working parts of the pump are first removed from the well and compressed air under high pressure and in large volume is then forced down through the tubing with a small amount of water or oil. As a tubing is lowered into the accumulated detrital material, the latter is blown out through the space between the tubing and the casing. It is said that shale cavings, loose sand, rocks, paraffin and other loose material can be thus blown out in a surprisingly short time, and more completely than they can be removed with the drilling tools and sand pump.

In this process, pressures up to 400 or 500 pounds per square inch must be developed in the air receiver, depending upon the depth of the wells. This pressure is built up in the receiver by the compressor, and the high-pressure air is then suddenly released into the tubing. When pressure in the receiver subsides to 150-pounds, the flow to the well is stopped until the high-pressure condition in the receiver is restored. After the tubing reaches bottom, the flow of

[9]See National Petroleum News, issues of Feb. 17, and July 16, 1924.
[10]Beard, A. A., and Bonnell, R. A., "Cleaning Oil Wells by Compressed Air," Trans. Am. Inst. Mining & Metall. Engrs., See "Petroleum Development and Technology in 1925," pages 170-173.



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Twenty wells were cleaned in the Dewey-Bartlesville district by this process at an average cost of $237.50 per well. The average time for cleaning a well was only three days. Cleaning out with cable tools in this field, is said to cost about $1,000 per well and the average time spent is 51-days. The air-cleaning process also resulted in a material increase in production.

Methods of Preventing Paraffin Accumulations in Wells

WE have seen that solid hydrocarbon waxes and residues within the pores of the reservoir rocks about the wells are frequent causes of premature decline in productivity. Some of the methods described in the preceding sections for dealing with sand accumulations may also be used in preventing and removing wax accumulations, but in addition to these, a variety of other methods are used and have been proposed. These methods have been described by Mills.[11]

Regulation of the fluid level in wells, so that the fluid level at no time falls below the top of the productive sand, is a common preventive measure. This prevents to some extent, the rapid escape of gas from the upper part of the reservoir rock with its resulting chilling effect, and the solvent action of the oil helps to keep the wall-rocks free of accumulated wax. Maintenance of back-pressure on the wells also prevents rapid

[11]Mills, R. Van A., "The Paraffin Problem in Oil Wells," U. S. Bureau of Mines, Reports of Investigations No. 2550, December, 1923. See also, National Petroleum News, issue of December 26, 1923.

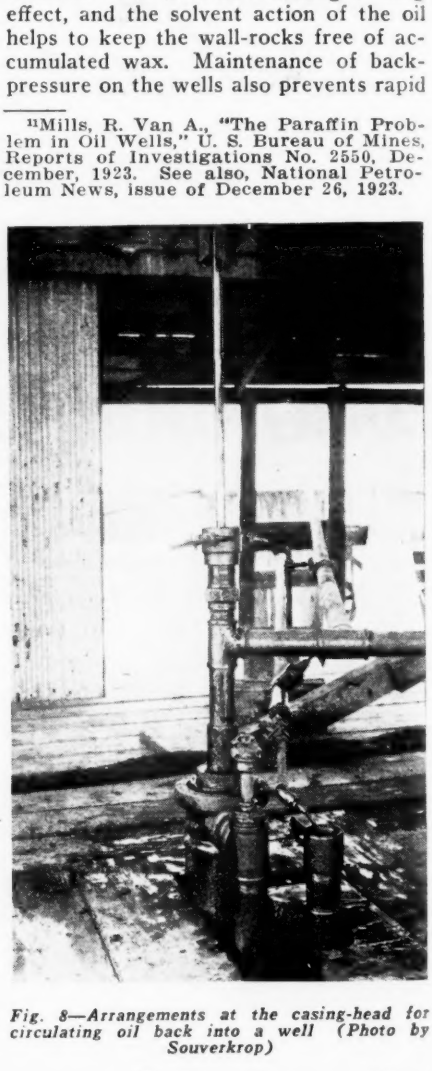

Fig. 8—Arrangements at the casing-head for circulating oil back into a well (Photo by Souverkrop)

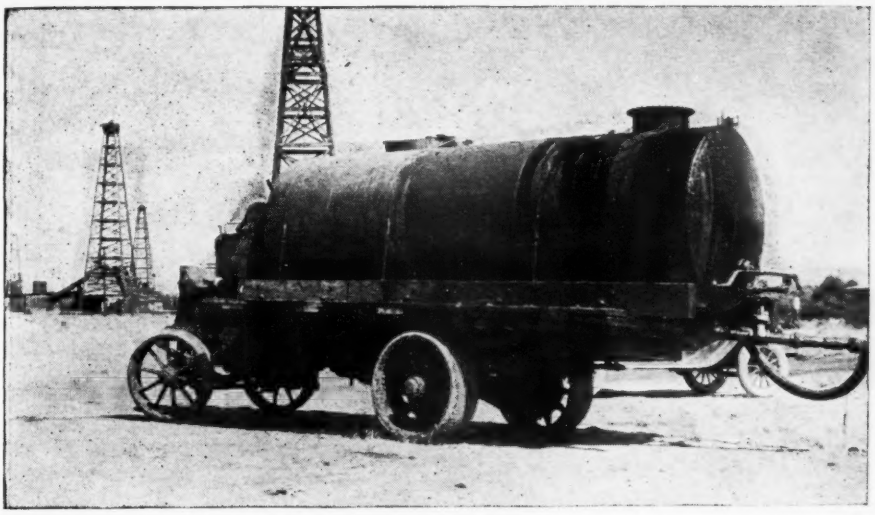

Fig. 9—Portable oil tank used in transporting crude oil for use in hydraulicking sand from wells (Photo by Souverkrop)

gas expansion of the entering gas, and the wax is somewhat more soluble in the oil under elevated pressure. Cavities about wells within the productive sands are also useful in preventing paraffin deposition. Slower rate of flow of the fluids into the larger surfaced cavity, results in less rapid gas expansion and less chilling of the gas and oil. The slower rate of flow and lower viscosity of the oil, also gives the oil less carrying capacity for detached particles of sand and silt.

Continuous or periodic heating of the wall rocks is also beneficial in preventing accumulation of wax. The use of circulating hot oil in this connection, has already been discussed. Occasional steaming of wells is also beneficial. Steam introduced between the casing and tubing, either intermittently or continuously, would probably prevent wax accumulation, but is costly and may not be feasible in deep wells. Electric heaters for use in oil wells as a means of preventing and removing wax accumulations, have frequently been proposed, but numerous mechanical and electrical difficulties have interfered with their more general use.[11]

Methods of Removing Paraffin Accumulations from Wells

IF wax has been permitted to accumulate in a well to such an extent that production is curtailed, several different methods may be employed in removing it and restoring the well's productivity. A common method involves the introduction of wax solvents, such as benzol, gasoline and heavier distillates. Frequently the solvent is preheated to increase the solubility of the wax. Such substances are only partially effective, since the wax is not readily soluble in them. Benzol is more effective than gasoline, but best results have been secured when the solvent has been preheated to such an extent that it melts the accumulated wax. Though the effectiveness of the solvent is increased by heating when used in this way, its primary function is to serve as a carrier for heat.

The solvent may be run into the well through tubing, or between the well casing and tubing; or, it may be poured into the open casing of a well, or lowered in a dump bailer.[11] The dump bailer is especially useful in introducing hot solvents with small temperature loss. The hot solvent should be promptly bailed or pumped out of the well after use, to prevent the dissolved and melted wax from again solidifying in the well as it cools. Mills states that this method of removing wax has been successfully used in certain wells in the Bradford field of Pennsylvania, it being customary to treat the wells with hot gasoline once in every three or four years. The method has also been found effective in the Salt Creek field of Wyoming. It has also been used to some extent in the Slick,[12] Cushing[13] and various other Oklahoma fields.

Other commonly used methods of removing paraffin involve the application of heat with the purpose of melting the paraffin so that it flows under the influence of gas pressure from the sands into the wells. In addition to the use of hot solvents, as mentioned above, steam is frequently used and is quite effective if it can be forced down to the oil sands without serious loss of temperature. Circulation must be established in order that a continuous supply of live steam may be caused to flow over the wall rocks exposed within the well. This may be accomplished by forcing the steam down to the bottom of the well through tubing, allowing it to return to the surface between the tubing and casing.

If a well is being pumped, a convenient arrangement is to provide a string of tubing telescoped over the tubing through which oil is lifted to the surface. Steam is introduced between the two strings of tubing and returns to the

[12]Schwarzenbek, F. X., and Ross, J. S., "Petroleum Engineering in the Slick Oil Field, Creek County, Oklahoma," U. S. Bureau of Mines and State of Oklahoma Cooperative Bulletin, 1922.

[13]Wardwell, Brandenthaler, Williams and Van Dall, "Water Problems in the Northern Part of the Cushing Field, Creek County, Oklahoma," U. S. Bureau of Mines and State of Oklahoma cooperative bulletin, February, 1927.

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surface between the outer tubing and the well casing. The steam thus serves to melt paraffin deposited on the rods and oil tubing, as well as on the wall rocks. Care should be taken that no great steam pressure be developed within the well, otherwise the melted paraffin may be driven further into the wall rocks.[11]

OTHER methods of developing heat involving the use of chemicals for the purpose of melting paraffin in wells, have been described by Mills. Calcium carbide introduced into a well with water, generates heat and acetylene gas. This method has been used to a limited extent in the fields of eastern Kansas. A mixture of caustic soda and aluminum also generates heat on contact with water. The use of these reagents constitutes a patented process that has been used in the old Pennsylvania fields. The use of sodium peroxide and water as a means of generating heat has also been proposed and used to a limited extent. Hydrogen and oxygen liberated by the reaction, become ignited in the well and burn. This method has been experimented with to a limited extent in some of the Mid-Continent and Appalachian fields. The chemical methods of heat generation are expensive and, it is thought, would only be applicable in special cases.

Experiments have been conducted by the Hope Natural Gas Co., by the Smith-Dunn Co., and by the U. S. Bureau of Mines in direct burning of paraffin in the wall rocks of wells by providing a continuous supply of air to the wells and igniting the oil and gas with a taper or fuse. The work done by the Hope Co. is particularly interesting.[14] A gas-air mixture is forced down through tubing and ignited by a lighted fusee previously placed in a burning chamber at the lower end of the tubing. The gas or oil produced by the well becomes ignited and burns, but is readily extinguished, when desired, by cutting off the air supply, or, if only gas is produced by the well, by diluting the gas with a surplus of air. By this method, a temperature of from 2300 to 3300° F. is attained at the bottom of the well. The lower two or three joints of tubing are burned off, but can be later drilled up without difficulty. Experience has shown that burning the accumulated wax in this way, does not close the pores of the sands with coked carbon. The intense heat apparently disintegrates the productive formation in some instances, so that much loose material caves into the well from the walls, enlarging the well cavity and opening up fresh, unclogged sand surfaces. Whether or not the method described could be satisfactorily used in wells producing asphaltic oils, has not been demonstrated, within the knowledge of the writer.

Many oil producers make a practice of combating wax accumulations in wells with the aid of explosives. This is an effective method of removing such accumulations, that probably functions not

[14]See National Petroleum News, Vol. 15, No. 34, p. 91. Aug. 22, 1923.

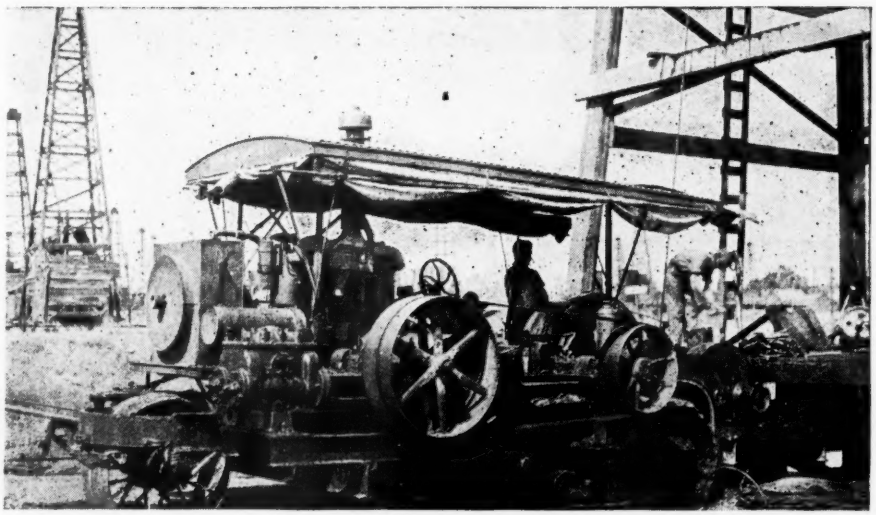

Fig. 10— High duty pump mounted on tractor, used in hydraulicking sand from wells (Photo by Souverkrop)

only by the violent disintegrating effect of the explosive on the rock walls of the wells, but also by the effect of the heat generated by the explosive in melting the paraffin. For this purpose, squib shells containing from 5 to 10 quarts of nitroglycerine are used. The shot should be "tamped" with a column of water. This method is preferred to all others in certain of the Oklahoma fields.[12]

Still other methods are employed in dealing with wax accumulations. Various forms of mechanical rotary reaming devices, designed to expand against the walls of the well and dress off the wax-impregnated rock surfaces, have been devised and find occasional use. Some of these are effective in wells of moderate diameter, but are scarcely adaptable in large shot-cavities in which the walls are several feet from the axis of the well.

When production of oil is impeded by accumulations of wax within the tubing or casing through which the oil flows to the surface, various types of mechanical scrapers are found to be most effective. A swab may be used for this purpose unless the wax deposits are unusually thick and resistant. Bennett and Sclater[15] have described a special form of scraping device that has been found adaptable to the conditions encountered in the Panhandle field of Texas, where wax accumulations have been particularly troublesome. Some operators in the Fox and Graham fields of Oklahoma, run the tools and swab in and out of each well daily.[16]

Methods of Removing Precipitated Salts from Wells

IN the previous article of this series, explanation was offered of the manner of formation in oil wells of certain organic salts which, under favorable conditions, may be deposited from water solutions in the pores of oil reservoir rocks, or in the well screens and perforations or tubing, in such a way as to seriously restrict flow of oil or gas into the wells. The remedy to employ in combating these inorganic salt accumulations, will depend upon their chemical nature. Some, such as sodium chloride and sulphate, are soluble in water and may be removed by prolonged washing with fresh water, which may be run into the well with the aid of a dump bailer or through tubing. Lime and other carbonates may be removed by treating with acid, preferably hydrochloric acid.[11] Some remarkable increases in recovery have been secured by acid treatment of wells where calcium carbonate accumulations had isolated the wells from the productive sands. Some precipitated substances, such as amorphous silica and gypsum, are not readily soluble in either water or acids, and in such cases resort must be had to the shattering effect of explosives. Indeed, explosives provide a convenient means of dealing with any inorganic accumulations of this character.

[15]Bennett, E. O., and Sclater, K. C., "Some New Aspects of the Gas Lift," Transactions, American Inst. Mining & Metall. Engineers, New York Meeting, February, 1927.

[16]George, H. C., and Bunn, J. R., "Petroleum Engineering in the Fox and Graham Oil Fields," U. S. Bureau of Mines and State of Oklahoma cooperative bulletin, 1924.

Summary

THE present article concludes a series of two dealing with the nature and manner of formation of well accumulations, and with methods available for preventing their formation and accomplishing their removal. It has been shown that accumulations of sand and silt, mineral precipitates, waxes and other forms of solid hydrocarbons, are readily formed under the conditions prevailing in oil wells, and, unless their formation is prevented, or unless they are removed in the incipient stages of accumulation, they may seriously restrict or even entirely cut off the flow of oil and gas into the wells.

Among the methods discussed for preventing their formation, are proper screening to restrain only the coarser components of the productive sand; the use of back-pressure methods and well

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Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Dividends from the Refinery Boiler Plant

L. L. BAKER, chief engineer of the Barnsdall Refining Co., has an interesting article in the May issue of *Barnsdall*, the company's house organ, on boiler operation. Stating that mechanical is always to be preferred to human control where it is practicable, Mr. Baker gives some of the advantages of automatic boiler feed water regulators over manual control.

In fact, says Mr. Baker, "correct feed water regulation, representing a trifling investment, pays a higher dividend than any other piece of power plant equipment."

In hand controlled plants, occasional if not frequent overfeeding is unavoidable, he says, because average men do not watch the gage glass closely enough. An overfed boiler is a positive detriment because it makes no steam for a while and throws the load on the other boilers on the line. Also it causes priming, which is very bad in a refinery. Priming or wet steam causes stills to blow, frequently followed by fire. The cost of installing such feed water regulators is very small, considering the saving in labor and improved operation, he says and gives an illustration as follows:

"An average sized boiler plant, say 10 300-horsepower boilers, needs two men per shift when fed by hand. With feed water regulators, one man can operate the 10 boilers and do a better job of it. The labor saving thus made possible would pay for equipping these 10 boilers in three months."

Mr. Baker does not go into the further savings made possible in a boiler plant by automatic stokers, draft gages, air regulators and other control equipment. The possibilities of automatic regulation of stills in improving efficiency also are important.

Seneca Putting in New Equipment

GROUND is being broken at the refinery of the Seneca Oil Works, Warren, Pa., for the building of a boiler house to house two new boilers, according to George P. Brockway, president and general manager of the company. The boilers are to be of the return tubular type, rated at 200 horsepower each and will be put in by the Union Iron Works of Erie, Pa.

Other improvements Mr. Brockway plans to put in are a 500-barrel shell still and a filter house for the manufacture of bright stocks. The latter will consist of 12 eight by 14 filters and a Herreshoff furnace will be installed for reburning the fullers earth.

Moore Looking Over Kansas Refining Centers

A CORRESPONDENT in Kansas writes us that George Moore of the Lake Petroleum Co., with several associates, was a recent visitor in Wichita and Augusta. Mr. Moore was formerly president of the Moore Refining Co., with a plant at Arkansas City and was president of the Western Petroleum Refiners Association. Before his connection with the Moore Refining Co., Mr. Moore was head of the Shaffer Oil & Refining Co., a Byllesby interest.

Better Than 300 Barrels of Crude Per Man

THOMAS W. STREETER, chairman of the board of the Simms Petroleum Co. and a director of the Richfield Oil Co. of California, writes in to say that he was correctly quoted in a newspaper interview which was commented on on page 96 of the April 27 issue of NATIONAL PETROLEUM NEWS. In this interview Mr. Streeter stated that the Richfield's Rioco refinery, running 30,000 to 35,000 barrels of crude, operates with only 100 men.

In his letter Mr. Streeter says that he understated the achievement of the company. Since then he has obtained exact information which is that only 83 men instead of 100 are employed. He sends in the list of men employed as follows: Skimming plant: one superintendent, one assistant superintendent, three stillmen, three stillmen helpers, three firemen, three firemen helpers, five electricians, seven treating plant men, seven pumpers, one shipping foreman, two car loaders, one gauger, 15 maintenance men, including foreman, pipefitters, machinists, blacksmiths, carpenter and helpers, and four laboratory men, including the chief chemist, assistant chemists and watchmen.

The gas recovery absorption plant is manned by a superintendent and three operators, the cracking plant by the superintendent and nine operators. General employes number eight, four clerks, one messenger, one truck driver, one roustabout and one janitor-gardener. The Richfield is putting in another 10,000-barrel a day skimming unit and additional Cross cracking capacity of 4000 barrels a day.

Perdew Goes With Refinery Engineering Firm

WILLIAM E. PERDEW, formerly general manager of refining with the Derby Oil Co., Wichita, Kan., is now associated with the Winkler-Koch Engineering Co., of Wichita. This company undertakes general refinery engineering, specializing in bubble towers, tube stills and heavy residuum burning in connection with flash stills. About 150 Winkler-Koch towers are now in operation in various plants, mostly in the Mid-Continent field.

Prior to going to the Derby Oil Co. Mr. Perdew was connected with the Union Petroleum Co., in Philadelphia, going to the Sinclair organization when the Union was absorbed by the Sinclair interests.

Marland Buys Used Fleming Stills

THE Marland Refining Co., Ponca City, Okla., has bought five of the old Fleming stills that were formerly operated at the plant of the Barnsdall Refining Co., Wichita, Kan., according to a statement in the May issue of *Barnsdall*. Three of the stills have already been shipped and the other two will move to their new home shortly.

Pipe Stills Growing in Favor

M. F. COWDEN, president of the Pennsylvania Oil Products Refining Co., Warren, Pa., states that a circulating pipe still has recently been completed at the company's refinery at Eldred, Pa. The new pipe still has a capacity of about 1000 barrels of crude a day.

What is Price of A Gasoline Customer: Baby Doll or Automobile?

By N. M. Mainpa
N. P. N. Staff Writer

CLEVELAND, May 20

WHAT is the price of a gasoline and motor oil customer?

This question surely does not appear in any of the "Ask Me Another" books and it is doubtful that the bright young authors of the nation's latest fad would answer successfully this puzzler.

There is no set price of a gasoline and motor oil customer or block of customers. Values range, if one may judge from trade pullers—gifts, premiums, and advertising—from the price of a mailing card with postage to a chance on a $600 automobile.

Some gasoline and oil distributors offer premiums at all times; to them premiums are a form of advertising. Other distributors give divers objects from baby dolls to washtubs to acquaint the motoring public with a new station but limit the distribution of gifts to a few days or a week. Others who are believers in the efficiency of novelty advertising, give away pencils, blotters, thermometers, radiator protectors, and many other small articles, in an effort to stimulate sales and to keep the concern's name before the public. Numerous advertising ideas and stunts have recently come to the attention of National Petroleum News.

* * *

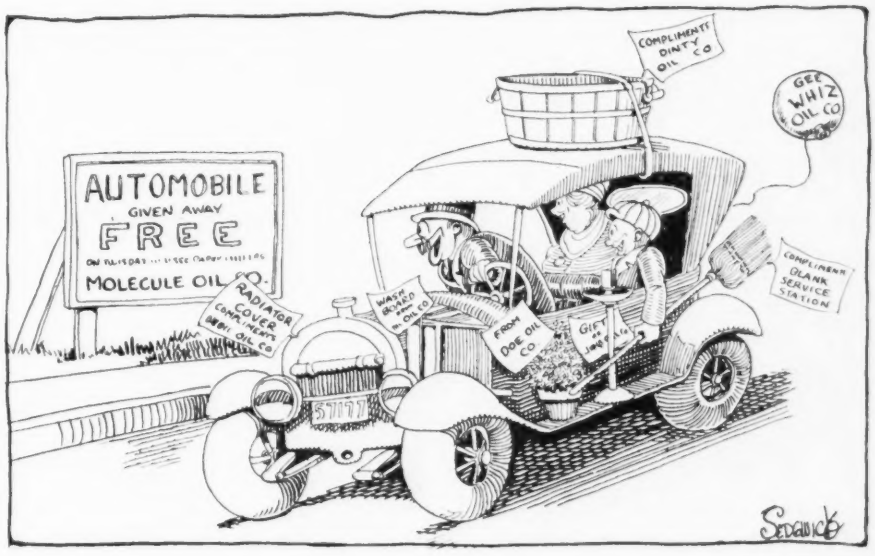
Porter Bros.' Garage is one of 10 Vicksburg, Miss., business houses that are to give away a Chevrolet coach July 4. Each of the 10 concerns is engaged in a different line of business so there is no overlapping of customer possibilities. A chance on the automobile is given with each $1 cash purchase at any of the 10 business houses and on each $1 paid on account. The latter provision has been a good bill collector, said E. H. Porter, one of the garage proprietors.

* * *

The Accurate Measure Oil Co., Columbus, O., reminds its customers that it is "time to refill" by placing that caption over the electric master clock which it has installed at one of its stations here, according to F. M. Morrison, president. The clock has a 24-inch dial on the outside of the station.

* * *

Delmer Garrett, who operates a service station on the Oklahoma-Kansas state line, distributed tickets with all purchases for 30 days before last Thanksgiving which gave each holder a chance to win a turkey or a duck. Holders of the first two numbers drawn were awarded a turkey each, and holders of the next four numbers a duck each. This offer increased sales at the station, he said.



A novel method of calling the motorist's attention to its gasoline and service is that used by W. W. Gresham, owner of the Gresham Service Station, Indianola, Miss. Twice a week Mr. Gresham sends a man to attach cards to the steering wheels of all parked cars along the street, advertising the gasoline, oil and tires that the station sells, and the services it renders, such as washing, greasing and oiling. Mr. Gresham is now erecting 150 road signs.

* * *

The proverbially long winter months need not drag wearily in Churubusco, Ind., where Grable Bros. have installed a radio at their service station to dispense the latest in jazz and gossip to their customers. They find this modern contrivance as profitable an investment as the old time general store proprietor found the old coal stove around which the leading gentry of the vicinity gathered of an evening to settle national problems or what not.

* * *

A smoking set given away by the Citizens Oil & Gas Co., Canton, O., was a popular opening day souvenir at its main station here recently. This feature resulted in the largest retail sale of gasoline through any two pumps during that day, according to F. K. Samuel, treasurer. The company has been giving away a stamp with each five gallons of gasoline purchased, or one stamp with each quart of oil as a recent advertising stunt. Twenty of these stamps were redeemed with a spark plug worth $1.50.

* * *

Pipes and playing cards advertising Texaco products, have been distributed by Dan Pfahl Co., Inc., Cleveland, O., distributor of products of The Texas Co., said F. C. Harris, office manager. Radiator covers were also given away last winter.

* * *

A "Favor Day" has been inaugurated by the Community Oil Co., Arkansas City, Kans., in an effort to familiarize the motoring public with that company's stations. The public is told the day previous by a one-fourth page advertisement in a newspaper. Candy has been the prize package so far. One day 50 one-pound boxes of chocolates were given to drivers of the first 50 cars that drove to the company's station to buy five or more gallons of gasoline. On another day a one-pound box was given to every fifth car irrespective of the amount of purchase. These favor days have been popular and have won customers who had not heard of the company before the advertised "Favor Day," said A. F. Morrison, president.

* * *

At a "Trades Day" celebration at Port Gibson, Miss., recently, an airplane which performed for the public, was fueled with Texaco gasoline and oil distributed at that city by the Bagnell Oil Co. The company had arranged with the pilot for him to throw several thousand dodgers from the plane, announcing that the machine was using Texaco gasoline and motor oil, said S. H. Bagnell, proprietor.

* * *

Personal letters have been found by many oil marketers to get business. Joseph H. Nicholson, proprietor of the Georgia Ave. filling station of the Standard Accessories Co., Washington, said personal letters to motorists solicit-

"Kwik-Flo"
"Fast-Flo"
"Max-Flo"

FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!

"Push-Pul"
"Skrew"
"Rench"

STEEL DRUM ACCESSORIES CORP.

BUFFALO, NEW YORK

What would Will Rogers say about PENN-EMPIRE?

PROBABLY the same as he said about Bull Durham . . . . . exactly nothing. But we won't hold it against Will. What we all admire him for, is his frank, natural way of expressing the truth. However we'd rather let our many good customers tell you what they think of PENN-EMPIRE, especially since we've installed our Sharples process that takes out every trace of wax from the oil, but leaves in the wonderful lubricating qualities that all our customers like so much.

Why not join the chorus of more-than-satisfied marketers who all agree that "When you buy Penn-Empire you get the best."

EMPIRE OIL WORKS, Inc.
Oil City, Pa.

TRACTOR OILS
MOTOR OILS
INDUSTRIAL OILS
KEROSENE
GASOLINE
PETROLATUM

EMPIRE OIL WORKS INC. OIL CITY, PA.
PENN EMPIRE
100% PURE PENNSYLVANIA OIL

UNIFORM PRODUCTION
WAREHOUSES AT STRATEGIC SHIPPING POINTS

When you buy Penn-Empire you get the best

ing their gasoline business increased gasoline sales 75,000 gallons a month at his station. Before sending these letters, the station was selling 15,000 gallons a month. The gain was 500 per cent.

Reminder cards are sent by Mr. Nicholson to customers on oiling, greasing and car washing on the first and fifteenth of each month; also on battery service and tires. Gasoline measuring sticks are permanently on the list of souvenirs given away by this company. Cigarets are also handled at the station and with each purchase, a box of matches carrying company advertising, is given. An ash, match and cigaret holder is presented to each closed car driver. The aim of the company is to advertise within a two-mile radius only.

* * *

Another marketer who believes in the appeal of the personal letter is Sam Abbott, Independent Oil Co., Natchez, Miss. Mr. Abbott writes a letter to each customer to thank him for his patronage and to assure him the right service when he returns. This stunt has been a successful business getter, Mr. Abbott said.

* * *

Direct mail advertising has been found by MacMillan & Cameron, Inc., Wilmington, N. C., to have the best "pull," according to Jane W. MacMillan, vice president, although cleanliness and attractiveness of service stations also have a strong appeal.

In an effort to do the unusual to celebrate the opening of one of its service stations, the Paramount Oil Co., Fort Dodge, Iowa, gave a movie ticket with each gallon of motor oil sold. Quart coupons were issued and four were redeemed with a movie ticket. Full price was charged for the oil, said H. G. Kortright, vice president and general sales manager.

Opening features at the Paramount station lasted a week instead of the customary one or two days. High test gasoline was sold during the first week at price of competitive gasoline, in an effort to put over this grade of gasoline and to establish the new station in the mind of the motorist, Mr. Kortright said.

* * *

Theatre programs and movies are frequently used by oil marketers for advertising their products. Wes Cooksey Oil Co., Brookville, Ind., uses films seasoned with a little comedy now and then, said Wes Cooksey, proprietor.

* * *

Ely Gas & Oil Co., Ely, Minn., uses the screen and newspapers, said Joseph Slogar, owner and manager.

* * *

Theatre programs and community newspapers are used by Doc White's Filling Station, Washington, D. C.

* * *

"Railroad" Jones Oil Co., Winston-Salem, N. C., gives away gauge sticks and calendars. Restaurant cards and

newspapers are used also, said R. R. Jones, proprietor.

* * *

Coupons, given with each purchase of gasoline by the Barberton Oil Co., Barberton, O., result in "good cheap advertising," according to B. B. Murphy, president. When 25 of these coupons are returned to the station, the motorist is given one gallon of motor oil.

* * *

A standing feature at the station of Robert Fee, Saylesville, R. I., is the giving away each Saturday of one quart of motor oil with every five gallons of gasoline purchased.

A thermometer sign, six feet high, in cream and green, is being used by the Pan American Southern Petroleum Co. throughout Mississippi. Two of these signs are allotted to each bulk plant area which are placed in the most prominent spots. The company also has just erected 200 10-foot road signs, two at each town where the company has a bulk plant and five on the main highways leading out of Jackson, Gulfport and Meridian, Miss. More than 400 signs for dealers who are selling a high gallonage, have been distributed.

* * *

Columbia Refining Co., Cleveland, gives trading stamps which have a trade-in value of 3 per cent at various Cleveland stores, including the largest department store.

* * *

Canfield Oil Co., Cleveland, recently sold its premium gasoline at the competitive price for one week to introduce it to a wider patronage, particularly as a premium summer fuel as well as a premium winter fuel.

* * *

Pocahontas Oil Co., Cleveland, radiocasts an orchestral program one hour each Saturday evening. Programs are printed on cards resembling theater tickets and distributed at the service stations the week preceding the broadcasting. A picture of the Pocahontas Indians, as the orchestra is named, was published in the May 7 issue of *Collier's* weekly.

* * *

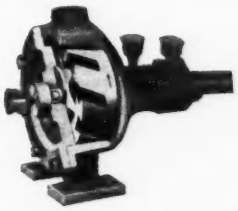
Electric lighted signs, 20 by 30 feet, have been erected at the filling station of Frank Suitor, agent at Cass Lake, Minn., for the Home Oil Co.

* * *

A household article for women and two quarts of oil with every five-gallon purchase of gasoline, were the opening day features at the station of the Lytton Oil Co. at Sac City, Iowa, recently.

LOS ANGELES, May 19. — California Petroleum Corp. recently broke ground for a new office building in Los Angeles, and the corporation plans to be installed in its new home about June 1, 1928. It is located on Broadway between Ninth and Tenth, will be 250 feet in height and will cost about $3,000,000. A fine theatre will occupy part of the ground floor. Office space will be leased, after the corporation is properly cared for.

There's Profit in Its Service



Cut-away section showing the Helical Cut Gears.

YOU profit with the use of the Perfection Rotary Pump. Its positive suction and discharge will unload a tank car efficiently with the minimum of time and power. And it will do it smoothly in operation, with a uniform flow of oil.

The pump mechanism is extremely simple, there being only two moving parts, the internal helical gear rotor and the helical pinion.

The teeth of the rotor in the Perfection Rotary Pump work like a pair of scissors on an angle instead of head on. Smooth running helical gears prevent friction, eliminate shock or strain and deliver a uniform flow of oil.

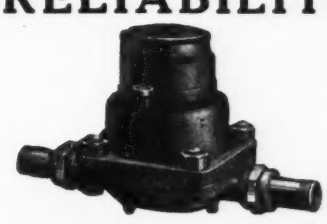
If you are looking for a pump of economical performance, that will last indefinitely and handle bigger gallonage, we suggest the Perfection Rotary Pump. It will do all we say and do it well.

Write for complete information.

Perfection Manufacturing Co.
2194 East Hennepin Avenue
Minneapolis, Minn.

PERFECTION ROTARY PUMPS

RELIABILITY COMES FIRST



Year after year, users of Niagara Oil or Gasoline Meters depend on them for reliable measurement of petroleum products in any quantity. Their accuracy is constant---the meters are simple and trouble proof---installation is easy. Write us for catalog.

NIAGARA OIL METERS

Built Since 1892 By

BUFFALO METER COMPANY

2889 Main Street :-: :-: **Buffalo, N. Y.**

Proposed Chart of Revenue and Expense Accounts for Oil Industry

Installment 1

MEMBERS of the Committee on Uniform Methods of Oil Accounting of the American Petroleum Institute and groups of oil company accountants are considering a tentative outline of charts of revenue and expense accounts which was drafted for the institute by the Petroleum Accounts Society of California. The charts have been submitted to group meetings of oil accountants at Los Angeles and Houston and will be taken up by the accounting committee of the institute at a meeting June 27 in Chicago, M. W. Mattison, general chairman of the A. P. I. committee, said at the Houston meeting recently.

The tentative draft was completed early in April after more than two months' effort by a committee comprised of Wesley Cunningham, assistant comptroller, General Petroleum Corp. and president of the accountants' society; R. E. Hitt Comptroller, J. W. Jameson Oil Co.; W. H. Hurt, comptroller, Wilshire Oil Co.; R. W. McKee, comptroller, Richfield Oil Co.; A. McNab, comptroller, Pan American Petroleum Co.; J. C. Miller, comptroller, California Eastern Oil Co.; A. J. Olmstead, Auditor, Chanslor-Canfield Midway Oil Co.; R. J. Pagen, comptroller, California Petroleum Corp., and J. H. Rounsavell, comptroller, Signal Gasoline Corp.

This draft was made to meet the requirements of the oil industry in California, Mr. Cunningham said in his report to Mr. Mattison on the results of the California committee's efforts. No attempt was made, he wrote, to supply accounts peculiar to operating conditions in other districts. Accounts made necessary by legal or other requirements elsewhere, will have to be added before the chart can be adopted by the oil industry as a whole. However, the tentative draft provides an extensive foundation upon which the general committee of the institute may work. Changes and adaptations to meet operating conditions elsewhere may be made at the June meeting.

"All of the account have been numbered," Mr Cunningham wrote, "using the decimal system and applying the two numbers left vacant by our committee in the preparation of the general balance sheet. The accounts have been grouped and numbered in such a manner as to permit small companies to reduce the number of accounts to a minimum, and at the same time permit the larger companies to carry major as well as minor controls, with as many accounts for detailed analysis as may be desired. Numbers left blank may be used by the accounting company for such additional accounts as may be required.

The tentative draft together with the explanitory notes are published now to enable the whole industry to offer suggestions for a final draft.

8 INCOME AND PROFIT AND LOSS

80 Gross Revenue from Oil and Gas Sales

800 Revenue from Sales of Oil
- 8000 Transfers to interdepartments
- 8001 Transfers to subsidiary companies
- 8002 Sales to affiliated companies
- 8003 Sales to others

801 Revenue from Sales of Wet Gas
- 8010 Transfers to interdepartments
- 8011 Transfers to subsidiary companies
- 8012 Sales to affiliated companies
- 8013 Sales to others

802 Revenue from Sales of Dry Gas
- 8020 Transfers to interdepartments
- 8021 Transfers to subsidiary companies
- 8022 Sales to affiliated companies
- 8023 Sales to others

81 Gross Revenue from Other Sales

810 Water
811 Salvage
812 Clay
813 Ranch and Orchard Products
814 Commissary Supplies (Meals) Etc.
815 Ice
816 Marine Slop Chest
819 Miscellaneous

82 Gross Revenue from Operating Services

820 Revenue from Production
- 8200 Crude Oil
- 8201 Gas
- 8202 Natural Gasoline
- 8203 Refined Products

821 Revenue from Oil Transportation
- 8210 By Pipe Line
- 8211 By Tanker
- 8212 By Barge
- 8213 By Tank Truck
- 8214 By Tank Car

822 Revenue from Oil Handling
- 8220 Storage of Oil
- 8221 Oil Exchanges
- 8222 Loading and Unloading

823 Revenue from Tank Car Operations
- 8230 Rentals
- 8231 Mileage Earnings

824 Revenue from Oil Treating
- 8240 Dehydrating
- 8241 Treating Gas
- 8242 Treating Tops
- 8243 Compressing Gas

825 Revenue from Other Services
- 8250 Hauling
- 8251 Drilling for Others
- 8252 Shop Work for Others
- 8253 Power and Light
- 8254 Telephone and Telegraph
- 8259 Miscellaneous

83 Gross Revenue from Non-Operating Sources

830 Rentals Received
- 8300 Rentals of Lands
- 8301 Rentals of Houses
- 8302 Rentals of Equipment
- 8303 Rentals of Rights of Way
- 8309 Miscellaneous

831 Royalties Received
- 8310 From Lands Subleased
- 8311 From Oil and Gas Handled by Others
- 8312 From Equipment or Process used by Others

839 Miscellaneous

84 Miscellaneous

840 Discount on Purchases
841 Interest Earned
- 8410 From Interdepartments
- 8411 From Subsidiaries
- 8412 From Affiliated
- 8413 From Others

842 Dividends Received
- 8420 From Subsidiaries
- 8421 From Affiliated
- 8422 From Others

843 Amortization of Premiums on Funded Debt
849 Miscellaneous

85 Deductions from Sales

850 Allowances—Oil and Gas Sales
- 8500 Commissions (other than Salesmen)
- 8501 Returns
- 8502 Allowances
- 8503 Discount on Scrip Sales to Others

851 Delivery Expense—Oil and Gas Sales
- 8510 Railroad Freight and Express
- 8511 Marine Freight
- 8512 Truck Delivery Expense
- 8513 Tank Car " "
- 8514 Tanker " " (Marine)
- 8515 Barge " "
- 8516 Pipe Line " "
- 8517 Drum and Package Delivery Expense

852 Allowances—Other Sales
- 8520 Commissions (other than Salesmen)
- 8521 Returns
- 8522 Allowances
- 8523 Royalties Based on Sales

853 Delivery Expense—Other Sales
- 8530 Railroad Freight and Express
- 8531 Truck Delivery Expense
- 8532 Tank Car " "
- 8533 Barge " "
- 8534 Pipe Line " "
- 8535 Drum & Package Delivery Expense

86 Cost of Commodities Sold

860 Cost of Oil Sold
- 8600 Transfers to Interdepartments
- 8601 Transfers to Subsidiary Companies
- 8602 Sales to Affiliated Companies
- 8603 Sales to Others

861 Cost of Wet Gas Sold
- 8610 Transfers to Interdepartments
- 8611 Transfers to Subsidiary Companies
- 8612 Sales to Affiliated Companies
- 8613 Sales to Others

862 Cost of Dry Gas Sold
- 8620 Transfers to Interdepartments
- 8621 Transfers to Subsidiary Companies
- 8622 Sales to Affiliated Companies
- 8623 Sales to Others

863 Cost of Other Sales
- 8630 Water
- 8631 Salvage
- 8632 Clay
- 8633 Ranch and Orchard Products
- 8634 Commissary Supplies (Meals) etc.
- 8635 Ice
- 8636 Marine Slop Chest
- 8639 Miscellaneous

87 Cost of Operating Services Sold

870 Cost of Production
- 8700 Of Crude Oil
- 8701 Of Gas
- 8702 Of Natural Gasoline
- 8703 Of Refined Products

871 Cost of Oil Transportation
- 8710 By Pipe Line
- 8711 By Tanker
- 8712 By Barge
- 8713 By Tank Truck
- 8714 By Tank Car

872 Cost of Oil Handling for Revenue
- 8720 Storage of Oil
- 8721 Oil Exchanges
- 8722 Loading and Unloading

873 Cost of Tank Car Operations
874 Cost of Oil Treating
- 8740 Dehydrating
- 8741 Treating Gas
- 8742 Treating Tops
- 8743 Compressing Gas

875 Cost of Other Services for Revenue
- 8750 Hauling
- 8751 Drilling for Others
- 8752 Shop Work for Others
- 8753 Power and Light
- 8754 Telephone and Telegraph
- 8759 Miscellaneous

Saves Time Cuts Costs Draws Trade *Increases Profits* !

THE Larkin-Thuro Electric Lift saves time for both car owner and service man by making every bearing quickly and easily accessible. It cuts costs by permitting the servicing of more cars per day, while it also costs less to buy, install and operate. It draws trade by speeding up servicing time, allowing the owner to see that his car is thoroughly lubricated and eliminating the element of danger connected with driving onto pits or racks. By saving time, cutting costs and attracting trade, it increases the profits from increased sales per customer.

Larkin-Thuro *Electric* Lift

Simple, efficient, screw type design. No air compressor required; no open pit, no leakage of air or fluid. Once raised to whatever height desired, it will remain at that point until raised or lowered by operator. Raises or lowers car full 50″ in 80 seconds. Automatically stops at full height and ground level. Track constructed of I-beams and channel iron 16′ long, and 15″ wide. Rotates full 360 degrees. Comes complete with 1½ h.p. reversible motor, reduction gear, etc., ready for immediate installation. Average installation cost $35. Operating cost less than ½ cent per lifting operation.

ASK YOUR JOBBER or write us today for literature, blue prints, etc.

The Larkin-Thuro Corp.
Dayton, Ohio

PRICES DOWN!

On Complete Tank and Fitting Outfits for Single Pump Installations

Whatever your needs—whether it be small underground tank outfits or bulk storage equipment—wait until you have seen our new prices. Write today—a direct order will save you time and money. Shipment guaranteed the same day we receive your order. All tanks electric Arc Welded.

Outfit No. 200-C
200-gallon No. 12 ga. x 28" x 72", black underground.

Outfit No. 280-C
280-gallon $\frac{3}{16}$" x 42" x 49", underground.

Outfit No. 5-C
5-bbl. No. 14 ga. x 36" x 63", galvanized.

Outfit No. 550-C
550-gallon $\frac{3}{16}$" x 48" x 73", underground.

Outfit No. 10-C
10-bbl. No. 14 ga. x 42" x 93", galvanized.

Outfit No. 1000-C
1000-gal. $\frac{3}{16}$" x 64" x 73", underground.

Each tank includes the following fittings: One 2" x 30" fill pipe with C. I. Lock Cap; one 3½"x1½"x1½" or 3½"x2"x2" double bushing; one gauge stick.

All Prices f. o. b. Indianapolis

EMERSON-SCHEURING TANK COMPANY

Indianapolis Indiana

88 Deductions from Gross Earnings

880 Oil Carrying Charges
- 8800 Oil Storage Gains or Losses
- 8801 Oil Storage Expense

881 Marketing Expense
- 8810 Loading and Shipping Expense
- 8811 Main Distributing Station Expense
- 8812 Sub Distributing Station Expense
- 8813 Service Station Expense
- 8814 Direct Selling Expense
- 8815 Marketing Department General Expense

882 Intangible Development Expense
- 8820 Drilling Labor Expense
- 8821 Unproductive Drilling Expense
- 8822 Process Development Expense

883 Adjustments of Interdepartmental Earnings
- 8830 Production Department
- 8831 Natural Gasoline Department
- 8832 Pipe Line "
- 8833 Storage "
- 8834 Refining "
- 8835 Tank Car "
- 8836 Marine "
- 8837 Marketing "
- 8839 Other "

884 Idle Plant Expense

885 Retirements of Capital Assets
- 8850 Amortization of Leases
- 8851 Amortization of Patents
- 8852 Amortization of Appreciation
- 8853 Abandonments of Leases
- 8854 Abandonments of Construction
- 8855 Sale or Disposal of Assets
- 8856 Fire or Casualty Losses
- 8857 Depletion Based on Cost
- 8858 Depreciation

886 Taxes

887 Insurance

888 General Expense

889 Miscellaneous

89 Deductions from Other Income

890 Discount Allowed
- 8900 On Sales to Employees
- 8901 To Others

891 Interest Due on Funded Debt

892 Interest Due on Floating Debt
- 8920 To Interdepartments
- 8921 To Subsidiary Companies
- 8922 To Affiliated Companies
- 8923 To Others

893 Amortization of Discount on Funded Debt

894 Uncollectible Accounts (Bad Debts)

895 Employees Benefits
- 8950 Welfare
- 8951 Pensions
- 8952 Insurance
- 8953 Stock Subscription Bonuses

899 Miscellaneous Other Deductions

EXPLANITORY NOTES

8. Includes all revenues, operating and maintenance expenses and extinguishment of capital assets, entering into the profit and/or loss of the company. The following accounts should be maintained.

80. Includes gross proceeds received from sales of crude oil, natural gas, residual dry gas, natural and refined gasolines, distillates, fuel oil, or other petroleum products. Appropriate sub-accounts may be maintained as outlined in the proposed chart, or, if the accounting company so elects, sub-accounts 800 to 809 inclusive may be used to collate revenues from sales of specific products, such as crude oil, gasoline, fuel oil, distillates, etc.

If the accounting company operates on a departmental basis and passes charges or credits between departments to cover the transfer of products, then appropriate sub-accounts, as outlined in the Chart of Accounts, should be maintained to cover such transfers.

81. Includes gross proceeds received from sales of water, salvage, clay, ranch and orchard products, commissary supplies, ice, and commodities other than major commodities constituting the accounting company's stock in trade.

Appropriate sub-accounts may be maintained as outlined in the chart of accounts, or captions changed to suit the need of the accounting company.

82. Includes gross proceeds received by accounting company for performance of services. Also includes gross revenues accrued by accounting company from interdepartmental operations. If the accounting company elects to charge their oil inventories with the market value of oil production then sub-account 820 should be used, otherwise this account will not be used. If this account is used, appropriate detail accounts may be maintained for commodities, such as crude oil, natural gas, etc.

83. Includes revenues received by the accounting company as set forth in the detail accounts, when such revenues do not result from the performance of operating services by the accounting company.

84. Includes all other income of a general nature other than revenues from operations or rentals and royalties received from non-operating services. The items included under this caption are set forth with appropriate sub-accounts.

85. Includes allowances and delivery expense resulting from sales made by accounting company. These items are treated as deductions from sales in order to reduce Gross Revenues from Sales to Net Proceeds at a specific delivery point.

86. Includes the net cost of the commodity sold by the accounting company. Appropriate sub-accounts should be maintained as outlined in the explanation for account 80.

87. Includes cost of performing the operating services, for which the accounting company has received revenue as outlined under account 82. Appropriate sub-accounts should be maintained as shown by the Chart of Accounts. The costs will first be collated under the various expense classifications, numbered 90, 91, 92, etc. and transferred to the appropriate subdivisions of Account 87, unless the accounting company is exercising the options outlined under the various expense accounts.

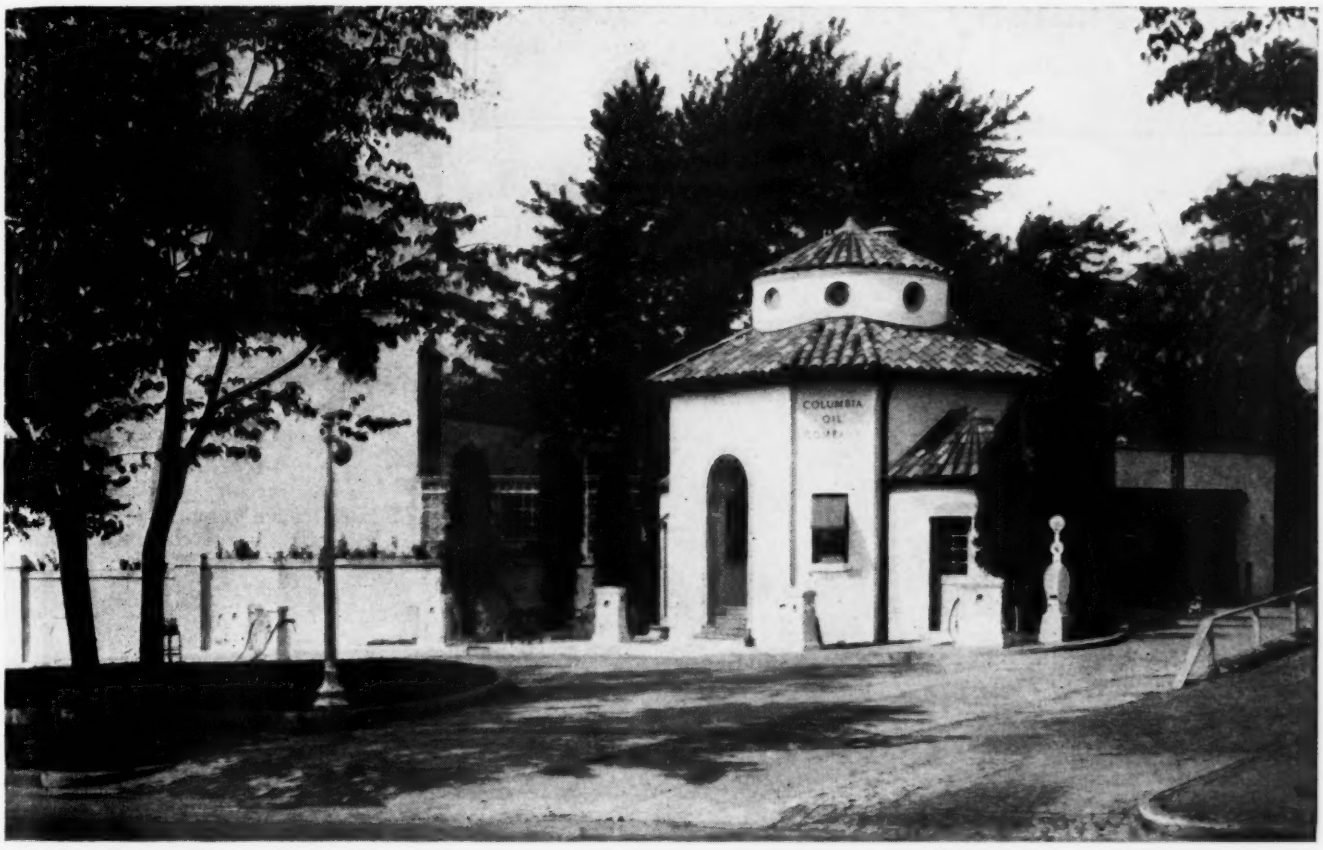
88. Includes expenses, as outlined in the Chart of Accounts, which are not chargeable either to Cost of Sales or Cost of Operating Services. If the accounting company elects to charge their Oil Inventories with the market value of crude oil or refined products produced, then sub-account 883 shall be used to adjust inventories to the lower of cost or market. Similarly, this account shall be used to adjust the difference between tariff and cost covering oil transportation by pipe line, tanker, etc., where accounting companies use one figure for computing their oil inventory cost and credit the carrying department at tariff.

If the accounting company elects to charge off intangible development expense and does not absorb such expense in their Oil Inventories, Account No. 882—Intangible Development Expenses—will be used. This account will similarly be used for the unabsorbed portion of intangible development expense where the accounting company absorbs only such intangible development expense as occurs within a producing district.

89. Includes expenses of a general nature not applicable to Cost of Sales or Operating Services.

(To be concluded)

Filling Station Mistaken For Memorial Building



Tourists in Washington, D. C., stop in to ask what memorial or monument this is and to whom dedicated. It is the Plaza service station of the Columbia Oil Co., Inc., Rosslyn, Va., dedicated to a service indispensable in a modern motorized existence.

WASHINGTON, May 20

IN a city where stately monuments and gorgeous buildings are a tradition stands a white stucco service station often mistaken by visitors for some memorial building. Octagonal in shape, this station is flanked by cedars on either side, and, with a naturally good background of other trees, its appearance is not unlike that of some structure dedicated to one of the nation's heroes.

It is the Plaza service station of the Columbia Oil Co., Inc., Rosslyn, Va., and is located on the Union Station Plaza at Washington. Recently it received recognition for excellence in architectural design from the Washington board of trade in the form of a bronze medal. It has elicited much comment from people who come to view it, as well as from the press. "The Architectural Forum" which published both a story and picture of it in the July, 1926 issue, and more recently "Country Life," published an article about it.

During the summer motoring season, many tourists stop in at the station to ask what monument it is and to whom dedicated, according to Robert G. Worthington, president. No pump, pump island nor even grease spot is there to loudly proclaim the business conducted within. Because of its too aesthetic appearance, the company installed, since the accompanying photograph was taken, signs denoting that gasoline, motor fuels and lubricating oils are dispensed there.

The seven rather massive, white stucco posts at the front and side of the station, replace the ordinary pump, and successfully conceal the Erie meter system gasoline outlets.

A tall, narrow-arched opening, effectively decorated with a border of color, which leads to the front door, further conveys the impression of a memorial building rather than a commercial enterprise. The overhanging cornice conceals electric lights which flood the building walls with light at night. White lattice work at the rear partly hides the view of adjoining buildings and yards. Two drain pits at the back are covered by a building harmonizing with the station itself.

A small circular wing at the left is the pump room and a similar one at the right is the ladies' rest room. Telephone and office rooms comprise a section off the main lobby, and a men's rest room is at the rear.

Lamp posts are painted to harmonize with the station. Potted plants are a decorative feature along the high white walls at the side and back.

Fuel and Oil Small Part of Auto' Expense

Staff Special

CHICAGO, May 19.—Figures developed in a series of experiments by the Iowa State College show that it costs 10.27 cents a mile to operate an automobile and that the oil man receives less than 2 cents of it. Eleven automobiles were used in the experiment. They ranged in price from $400 to $1,800.

Cost per mile of operating an automobile was divided into depreciation, 3.16 cents; gasoline, 1.61 cents; service, 1.24 cents; interest, 1.24 cents; tires, 0.98 cents; garage, 0.83 cents; license, 0.59 cents; insurance, 0.31 cents, and oil 0.31 cents. The information was released by the Illinois committee on public utility information to show the economy of traction line travel.

CLEVELAND, May 19.—Charles McLean, vice president of the Canfield Oil Co., Cleveland, O., has recently returned from a month's cruise with his family through the West Indies.

On the trip Mr. McLean visited Cuba, Jamaica, Costa Rica and Panama. Good weather every day, plus the presence of Charles G. Dawes, vice president of the United States, and party, who were on the same steamer part of the way, helped to make the trip an enjoyable one. The receptions tendered Mr Dawes at the various ports were enjoyed by the McLean family.

Our Industry—A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

A POOLING of interests in an undivided one half of the minerals in and under 160,000 acres of land in western Oklahoma is sought through the medium of a royalty company formed at Oklahoma City by W. M. (Bill) Darnell, formerly Democratic candidate for governor of Oklahoma. The pool is limited to 2000 members, or shares, and none of the stock will be sold for cash. One share will be issued in exchange for one half of the royalty in and under each 80 acres of land put into the pool. Some of the royalty interests already pooled are described as being located close to present developments; others are farther removed from production.

Original royalty owners, under this plan, pool only a half of their holdings; and in the event of production on land owned in fee they will still retain one-sixteenth royalty plus their community interest with others in the one-sixteenth pooled. All members will share in revenues of the entire pool as regards the one-sixteenth royalty from any productive properties.

The Co-operative Royalty Co., under which names Darnell operates, has opened an Oklahoma City office in charge of Aldrich Blake.

* * *

THE recent sale of a half interest in the famous Stevenson tract in the Humble, Texas, field is of general interest only because of the sentiment which attaches to it. The tract was originally opened up by J. S. Cullinan, T. P. Lee and E. F. Woodward, then operating as the Farmers Petroleum Co., after these men had retired from executive positions in The Texas Co. The present sale for consideration reported to have been $590,000 gives the Texas Co. full control of the 525-acres of the Stevenson tract. Purchase was made from Galena Signal Oil Co. of Texas, a J. S. Cullinan interest, to which it had been transferred from the old Farmers Petroleum Co. The tract now has settled production of about 1000 barrels daily, but at one time in its history it yielded up as much as 28,000 barrels daily.

* * *

PROSPECTING for oil in northeastern Mississippi has been carried as far south as Lowndes county, writes T. J. Hogan of Columbus, Miss. A test well is to be drilled on the Frank Rye farm, in 22-15-17, north of Caledonia. The Brummett-Montrond interests and the Natural Gas & Fuel Corp., of El Dorado, Ark., are credited with making the test.

COL. DAN T. MOORE

COL. DAN T. MOORE is better known outside the oil industry than he is in it. The statement is relative, however, and contains no reflection on the colonel's extensive acquaintance throughout the southwest's realm of petroleum.

The colonel, who represents the Northern Fire Apparatus Co., Minneapolis, selling pumps and other equipment to the industry, lacks a mechanical engineering degree from Zurich Polytechnic only because he never went back to write his thesis after finishing his scholastic work.

Dan Moore, as an adventurous stripling, took more interest in things military than he did in returning to Switzerland for his degree. Thus it came to pass that he was graduated from artillery school in time to serve in the Spanish-American war under an uncle who was a regular army colonel. He was then sent to the Phillipines at the time of Aguinaldo's insurrection and he barely missed action in China when the Boxer rebellion broke. Orders to return to Manila reached him at Tien Tsin, on the way into China.

Moore who is a cousin of Mrs. Roosevelt, served as military aide at the White House in the days when the redoubtable "Teddy" was the nation's chief executive; of muscular build and quick with his punch, the colonel helped, as sparring partner, to keep Roosevelt in trim physically. The accompanying picture, recently taken at Houston, where Colonel Moore now lives, shows something of the physical resemblance of the famous pair.

Colonel Moore entered the oil business after his return from France, where he served in the world war. He first operated individually in the general Ranger territory, making Fort Worth headquarters, afterwards wildcatting in other parts of Texas. Then he took up equipment sales for which he is exceptionally well fitted because of his engineering training.

* * *

FIELD superintendents and district agents of the Simms Oil Co., Dallas, recently attended a general conference presided over by Edward T. Moore president. The company's policy is one of close co-operation between the field forces and the general offices, resulting in get-together meetings when considered necessary or desirable.

Superintendents and district agents attending the last conference included the following:

Superintendent:—H. W. Scott, Smackover, Ark.; J. C. Wells, Smackover; C. S. Fisher, Morris, Okla.; L. E. Lewis, McCamey, Texas; W. L. Karns, Breckenridge, Texas; H. R. Bean, Homer, La.; R. R. Foster and R. B. McQuire, Navarro, Texas; D. W. Gee, Mexia, Texas; John A. Pearl, Hebbronville, Texas; R. W. Taylor, Archer City, Texas.

Agents;—F. F. Herzog, Mexia; D. R. Biggers, Navarro; Jay Sandboe, Archer City; L. P. Blanton, Morris; C. F. Brooks, Homer; J. W. Gammage, Hebbronville; A. J. Mitchell, Smackover; J. A. Tully, Breckenridge; James L. Wright, McCamey.

* * *

THE Panhandle operations of Skelly Oil Co., Tulsa, have been divided into two districts, with F. P. Graham as superintendent at Borger and J. E. Abbott as superintendent at Skellytown. The Borger district, under Mr. Graham, will embrace Hutchinson county and the Burnett lease in Carson county; the Schafer district, under Mr. Abbott, will extend east from the area first outlined, covering the Bryan, Schafer and McKay properties. W. I. Geery has been appointed Kansas division superintendent for Skelly at El Dorado, relieving Mr. Graham; and H. S. Mercer relieves Mr. Geery as Cushing-Osage district superintendent in Oklahoma.

* * *

A PARTY of oil men had chanced across a torsion balance crew out for a reading of their instruments in a remote region of west Texas. The chief of the crew had admitted to his visitors that they worked for the Humble Oil & Refining Co.

"You know Bill Farish?" asked one of the visitors, a friend of the president of the Humble.

The torsion balance chief scratched his chin a minute.

"Don't believe I do," he replied, "He doesn't work in our department."

Contractor Operates In Tropics

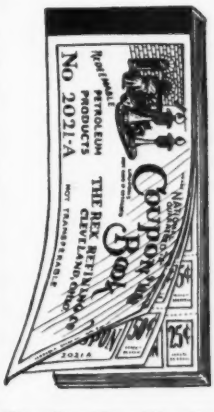
HUGH A. FITZIMONS

SOMETIMES one has to go to foreign territory to get a picture of a man who is well known at home. The accompanying snapshot lends point to that statement. Hugh A. Fitzimons, head of the Fitzimons Drilling Co., Shreveport, is a veteran in Louisiana-Arkansas development but he has usually kept out of the camera's range. Down in Venezuela he thought he was safe.

He is operating a number of strings of tools in Venezuela, drilling for the Lago Petroleum Corp. The association with the Lago executives dates back several years. He drilled many wells for the Dixie Oil Co. in Louisiana before and after the Dixie became a Standard of Indiana subsidiary. Fred H. Wickett, formerly in direct charge of the Dixie, became chairman of the board of the Pan American which acquired control of the Lago. When the latter company turned to contract drilling in Venezuela, Mr. Fitzimons was called upon to increase the scope of his operations. He now divides his time between Shreveport and Maracaibo Basin area.

LOS ANGELES, May 19.—D. L. Caldwell, for seven years with the Associated Oil Co. in California, more recently resident geologist at Rosecrans and Dominguez, has resigned to enter the employ of the Barnsdall Oil Company, stationed at Los Angeles.

LOS ANGELES, May 19.—Union Oil Co. has obtained right of way for a pipe line from its Wilmington refinery to the new Seal Beach field and actual placing of pipe is expected to start at once.



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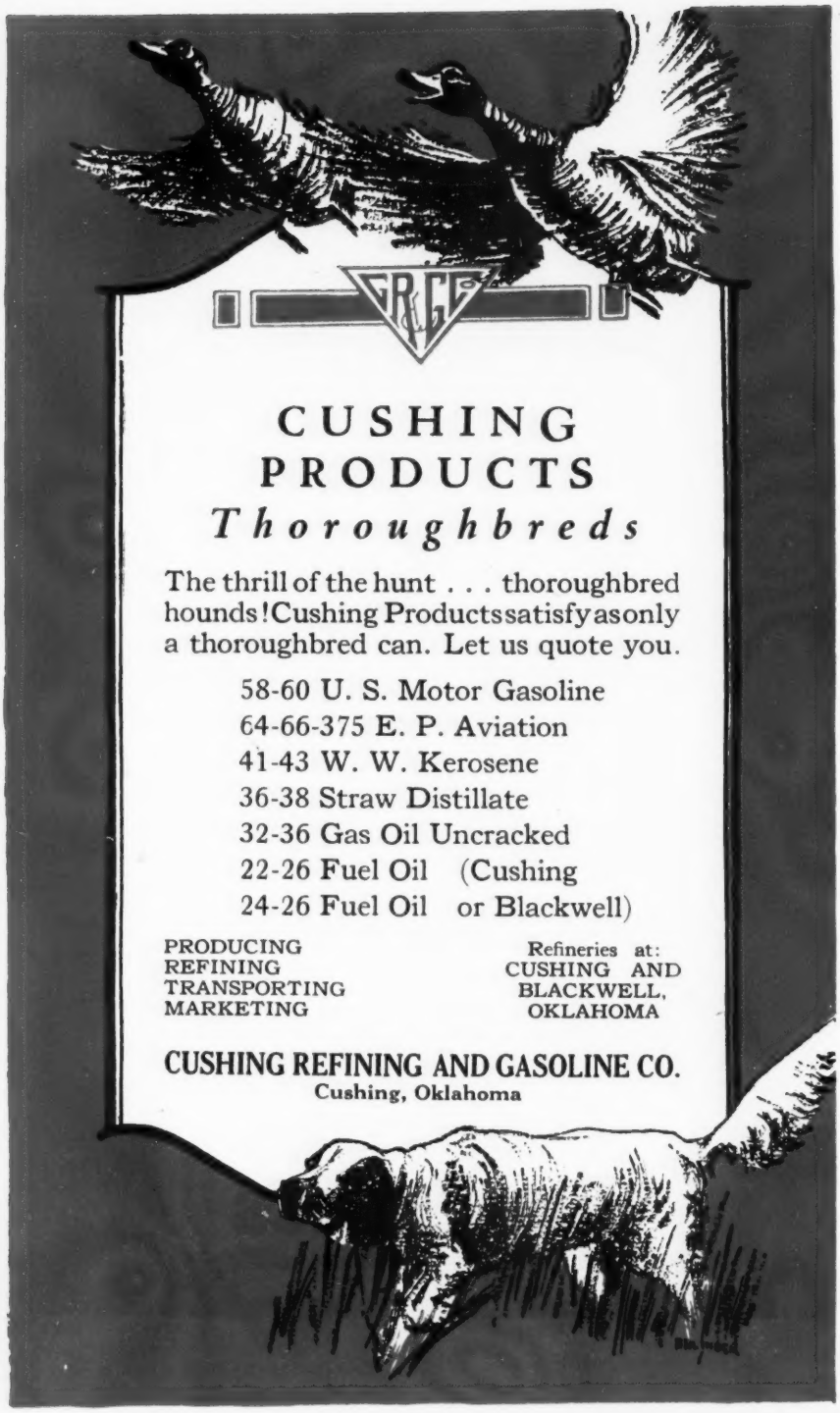
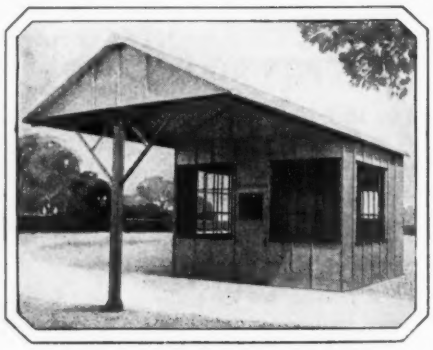
are made two inches wide, conveniently fitting in the vest pocket.

Contain 25 cents in 1-cent coupons, $1 in 5-cent, $3.75 in 25-cent and $5 in 50-cent coupons—a total of $10. Each denomination is a different color, making handling of amounts as easy as coin.

Write us for circular

NATIONAL CHECKING CO.
271 Chestnut St. St. Paul, Minn.





Marion Metal Buildings

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THE PERFECT METAL BUILDING

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MARION MACHINE, FOUNDRY & SUPPLY CO.
MARION, INDIANA, U. S. A.

New Stations Built or Being Built

Bemidji, Minn.—John Moberg, proprietor of Moberg Auto Co., is erecting filling station, to handle John Hancock Oil Co.'s products.

* * *

Sturgeon Bay, Wis.—Otto Konrad, manager of the Sawyer Co-Operative Oil Co. is seeking permit for filling station.

* * *

Madelia, Minn.—Eldor Strommen has purchased property for filling station. White Eagle products will be handled.

* * *

Davenport, Ia.—A. G. Van Mechelen and Henry Theunen are each seeking permits to build filling stations.

* * *

Spooner, Wis.—Claude Maurer is completing filling station and will handle Standard Oil products.

* * *

Detroit Lakes, Minn.—Martin Davis and Mr. Kandt are each building filling station here.

* * *

Minnewaukan, N. D.—Pure Oil Co. is completing bulk plant and filling station here.

* * *

Magnolia, Ark.—M. E. Peace Lumber Co. is completing filling station and store.

* * *

Milford, O.—R. D. Pinkvoss and Frank Brown completing filling station.

* * *

Waterloo, Ia.—Dr. J. D. Cecil & Co. will build filling station and store here.

* * *

Buffalo Lake, Minn.—Standard Oil Co. of Indiana will build service station.

* * *

Urbana, O.—Samuel Turner has purchased property for filling station.

* * *

Lawrence, Kan.—Standard Oil Co. of Indiana will build service station.

* * *

Madison, Wis.—Stoughton High Test Oil Co. will erect filling station.

* * *

Bowling Green, Mo.—Marland Oil Co. will erect service station.

* * *

Toronto, O.—Standard Oil Co. of Ohio will erect service station.

* * *

Aberdeen, S. D.—Home Oil Co. seeks permit for filling station.

* * *

Williamsport, Pa.—Gulf Refining Co. plans filling station here.

* * *

Kearny, Neb.—H. V. Grantham is erecting filling station.

* * *

Davenport, Ia.—W. L. Donnelly to build filling station.

* * *

Lebanon, Mo.—Skelly Oil Co. is building filling station.

Blackduck, Minn.—George Horton and Charles Anderson will build garage and filling station.

* * *

Columbus, O.—Four filling stations will be erected here by Refiners Oil Co., Dayton, O.

* * *

Emmetsburg, Ia.—Shaffer Oil & Refining Co. is completing service station here.

* * *

Sturgeon Bay, Wis.—Severson & Konrad have purchased site for filling station.

* * *

Mound, Minn.—Dwight Lounsbury and Lon Boynton will build filling station.

* * *

Wilbur, Neb.—Standard Oil Co. of Nebraska is completing service station.

* * *

Waterloo, Ia.—Elmer Thierman will erect filling station and tourist park.

* * *

Big Springs, Tex.—Phillips Bros. will build filling station and tourist camp.

* * *

Steubenville, O.—Standard Oil Co. of Ohio is building filling station here.

* * *

Fremont, Neb.—Shaffer Oil & Refining Co. is building service station.

* * *

Binford, N. D.—A filling station is being erected here by Steve Rovig.

* * *

Big Stone, S. D.—Standard Oil Co. of Indiana will build service station.

* * *

Marietta, O.—George Knox and James Nelson erecting filling station.

* * *

Crookston, Minn.—Cities Service Oil Co. will build filling station.

* * *

Omaha, Neb.—U. S. Oil Works will build service station here.

* * *

England, Ark.—Carl Lee Bros. are completing service station.

* * *

Hidgeway, Pa.—Charles E. Bloam is building service station.

* * *

Sidney, Neb.—Porter Oil Co. is completing service station.

* * *

Little Rock, Ark.—Sam M. Abeles is building filling station.

* * *

Rockford, O.—William Ebersole completing filling station.

* * *

Marshalltown, Ia.—Everist Oil Co. will build service station.

* * *

Marshfield, Wis.—Winona Oil Co. will erect service station.

* * *

Sioux Falls, S. D.—Brady Oil Co. will build filling station.

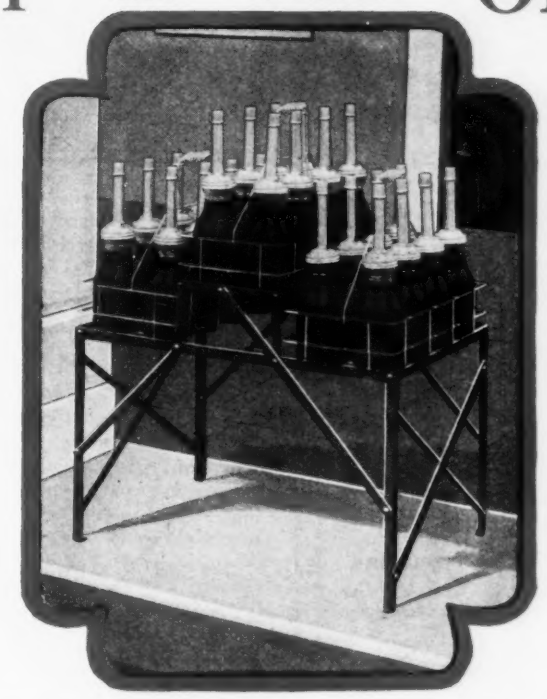
* * *

Larned, Kan.—Mrs. May Porter will build filling station.

* * *

Bobden, Minn.—Hans Moeller is building filling station.

OUT IN THE OPEN



SCHOOL BOYS swap things "sight, unseen," but the adult public likes to see what it is getting.

When you serve them with oil from Rhodes Prefilled Dispensers they see what they get and they *get all they see.*

Rhodes Dispensers save your time because they can be filled in slack moments and they save the customer's time, because he does not have to wait until you draw his oil into a measure.

Bring your oil out in the open and don't keep a good customer waiting.

J. B. Rhodes Company
Kalamazoo Michigan

RHODES *PRE-FILLED*
OIL DISPENSERS

ALLISON COUPON BOOKS

Have proved their superiority to many oil companies. They meet every requirement of accuracy and good workmanship.

Send for prices and samples

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Indianapolis, Indiana

ELIMINATE WEED-FIRE HAZARDS

All weeds and vegetation, causing constant dangerous fire hazards, may be economically exterminated by an easy application of ATLAS "A" WEED KILLER. This highly concentrated chemical ---diluted with water---is quickly applied with a simple spray apparatus.

This inexpensive and successful method is adopted as standard fire protection by the best maintained railroads, arsenals, oil tank farms and refineries.

Booklet "B", with complete information, sent on request.

Chipman Chemical Engineering Co., Inc
BOUND BROOK, NEW JERSEY

Bound Brook, N. J. **Houston, Tex.**
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ATLAS "A" Chemical
WEED-KILLER

If You Sell

TRANSMISSION AND DIFFERENTIAL
STASO
SERVICE

TRANSMISSION & DIFFERENTIAL
Lubricant

You can cash in on a real sales opportunity

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

Fairbanks, Morse & Co., Chicago, Ill., has recently developed a line of ball bearing motors for oil well service. It is said this is the first time this type of bearing has been available in a motor for oil field work. Other features are the use of four brushes per slip ring, instead of two, providing more safety, and the use of a fly wheel to level out the power curve when pumping a well, which may be unlocked from the shaft during the pulling operation, eliminating the necessity of reversing the fly wheel when the motor is reversed.

The use of ball bearings also eliminates the necessity of frequent inspection, the company states, and makes it possible to operate for long periods. Lubrication is not dependent on oil film since bearings are supported by a point contact rather than a surface contact.

* * *

C. J. Tagliabue Manufacturing Co., of Brooklyn, N. Y. announces that is has opened a branch factory at 5902 Carnegie av., Cleveland, O. The purpose of it is to cut down express and freight charges for users of tag instruments in Ohio, western Pennsylvania, Indiana and Michigan. Prime function of the new factory will be repair work, especially emergency orders. Stocks of all standardized instruments will be carried in Cleveland. The factory is in charge of the district manager, A. R. Anderson. F. A. Denz, F. L. Frock and F. Cramer have also been assigned to the Cleveland factory.

* * *

The Graver Corp., East Chicago, Ind., has put out an attractive booklet, illustrated in colors and describing the company's line of bulk storage tanks. Various types of bulk station and other storage installations are shown, tanks ranging from small sizes up to 55,000 barrels. Specifications for all tanks in the company's line are given, together with diagrammatic layouts for bulk stations of different sizes. Copies of the 48 page booklet will be mailed on request.

* * *

William A. Knapp, vice president of the Butler Manufacturing Co., Kansas City, recently made a 1600-mile trip by automobile with Frank McAllister, the company's Texas representative. They covered the west Texas oil fields, Wichita Falls, Amarillo, San Angelo and McCamey.

* * *

Hills-McCanna Co., 2025 Elston av., Chicago, has put out a booklet illustrated in colors, describing various devices for lubrication of machinery by the force feed system.

Heil Co., Milwaukee, announces that Heil Equipment is being used in the system for fueling airplanes at the Buffalo air port. The unit is an electrically welded four-compartment oval tank. The two forward compartments have 100 and 150-gallon capacity respectively and carry gasoline. The two rear compartments hold 25 gallons apiece and carry lubricating oil. The equipment is mounted on a two-ton Graham Brothers truck so that it can be brought alongside the airplane. The gasoline is pumped from the truck tank into the airplane tank through a hose by a special rotary pump designed by Heil.

* * *

Climax Engineering Co, Clinton, Ia., announce addition of two men to its sales force.

H. P. McCullough will be located at Houston, Texas, with offices at 328 Chronicle building, while E. H. Crippen will make his headquarters in Fort Worth, Texas, at 4023 W. 7th Street.

Mr. McCullough and Mr. Crippen are both experienced in the oil field practice.

The National Supply Companies are exclusive oil field distributors of Climax engines and the new members of the Climax sales force will work with them in the distribution of Climax products.

* * *

The Austin Co., Cleveland, O., engineers and builders, has opened a branch office in the Dixie Terminal Bldg., Cincinnati, which will cover territory in southern Ohio, southern Indiana and Kentucky. H. L. Cornelison, until recently manager of the company's Miami, Fla., office is in charge. The company now has 13 branch offices throughout this country.

Chicago headquarters were moved to 510 N. Dearborn St. May 1.

* * *

The Electric Controller & Mfg. Co., Cleveland, O., has appointed the Petroleum Electric Co., Tulsa, as its representative in Oklahoma and the Texas Panhandle. The company makes oil-immersed motor control apparatus especially suited to the oil industry because it is flame-proof and fume-proof, according to the company's claims.

* * *

Lewis-Shepard Co., Boston, have sent out the annual edition of "Jacklift and Stacker Practice," dealing with the company's line of machinery for handling and stacking barrels and other packages special purpose trucks, platforms and so on. The folder contains illustrations of various units in the company's line and carries photographs of the company's sales staff.

ON THE LAZY BENCH

National Petroleum News

What a Good Sunday Means in Gasoline Sales

On Sunday, July 25, 1926, it is estimated that more gasoline was sold in the United States than upon any one day before or since. It was a day of almost universal good weather, following a period of extreme heat. It presented all the elements of invitation to the motorist to get out on the country roads. Statistical experts concluded that somewhere between 860,000 and 1,000,000 barrels of gasoline were consumed on this record Sunday. It is not easy to visualize such a quantity as 850,000 barrels of gasoline. A suggestion of it is conveyed by the statement that in tank cars of 10,000 gallons capacity each, it would make up a railroad train about 31 miles long—just a single day's supply. In order to produce this amount of gasoline 2,400,000 barrels of petroleum must be taken from the earth and refined—the product of 301,000 oil wells scattered through nineteen states all the way from New York to California and from Texas to Montana.

—Skelly News

◈ ◈ ◈

Aye Tank So Too

There had been a serious railroad wreck in Minnesota, and the Swede was the only person who had witnessed it. At the investigation they asked Ole to tell his version of the smash up:

"Val," says he, "I ban valking along the railroad track when I see a passenger train coming like hal from one direction, and I turn around, and here comes a freight train from the other direction."

"What did you think then?" asked the questioner.

"Val, I thought to myself, this ban a hal of a way to run a railroad."

—Pure Oil News

◈ ◈ ◈

We take It They Are Going to Build A New M. E. Church in Tulsa

But the practical, unimaginative term church is not adequate to describe this lofty structure of natural stone which has been placed like a precious jewel on Tulsa's breast near the throbbing heart of the city.

Tulsa World, May 4, 1927

◈ ◈ ◈

Is This the Truth?

"Can you tell me why an umbrella is like a jackpot?"

"That's easy. Because it's of no use to anybody until it is opened."

"Yes and it dosen't necessarily belong to the man who opens it, either."

—Pure Oil News

Why the Station Man Goes Home and Beats His Children

"We're in need of a barrel of gas!" came the message over the rural line to W. W. Armstrong, Sutherland Tank Station Salesman, one early April morning during a seasonable cloudburst which left roads almost impassable. As promptly as possible he took a truck load out to the country some seven or eight miles. Arriving at the origin of the message he found it was only a call of distress from a stranded motorist—"out of gas." After much trouble he succeeded in getting his truck by the coupe mired deep in the mud in order to serve it. When he asked if he should fill the tank, the lady replied: "Oh, no, just a gallon will take me to town. My tank leaks and I happened to run out. I'll fill up in town when it's repaired. Thanks, awfully, for helping me."

—Skelly News

◈ ◈ ◈

Pitch Something at Him

Nervous Musician: "Madam, your cat has kept us awake two nights with its serenade."

Mrs. Nextdore (tartly): "What do you want me to do, shoot the cat?"

Nervous Musician: "No, madam, but couldn't you have him tuned?"

—Atlantic Seal

◈ ◈ ◈

Another Scotch One

A Scotchman and a Hebrew were playing a golf match. Each had 100 strokes after 17 holes had been played. On the 18th the Hebrew had a paralytic stroke—and the Scotchman made him count it.

—Pure Oil News

◈ ◈ ◈

Interesting

Roy Riddle (Standard, La.)—"My wife explored my pockets last night."

F. T. Carroll—"What did she get?"

Riddle—"About the same as any other explorer; enough material for a lecture."

—McDonald Unloading Rack

◈ ◈ ◈

Another American Tragedy

C. H. Bickell (Tidewater)—"The censor can close all of these questionable shows, as far as I am concerned."

Paul Fenton—"Yes, I've seen all of them, too."

—McDonald Unloading Rack

◈ ◈ ◈

Righto

A man I like
Is Charlie Krupp,
He always says:
"Please fill 'er up!"

—Calpit Mission

Light Weight Folio

Your Name in Gold FREE

Folio and Inner Case Only

$10.10

No. 369—A compact outfit. Folio made from heavy 5-oz. smooth black cowhide, with 5½-inch over-all expansion and three inner pockets. Inner case contains six 4-oz. bottles, displayed on a background of red velvet. Each bottle is partitioned separately. Case also contains five grease jars.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

Practically all of the Leading Car Manufacturers have adopted

STASO

as the Transmission and Differential Lubricant for all new cars leaving their factories.

Why?

TRANSMISSION AND DIFFERENTIAL
STASO
SERVICE

GUARANTEE
FRY
VISIBLE

Refinery - Tank Wagon Markets

National Petroleum News

Mid-Continent Markets Generally Steady; Trade in Tulsa is Optimistic

Staff Special
TULSA, May 21

REFINERY markets in most areas of the Mid-Continent were generally unchanged this week, and as the week ended prices of most refined oils stood at approximately the same levels that prevailed a week before.

Natural gasoline slackened considerably this week but prices advanced further.

The trade as a whole pointed to generally steady tank wagon and crude oil markets as the most favorable element in the refined oil market for some time past. No price changes were made by major crude purchasing companies and but few revisions were made by Standard Oil companies in tank wagon price schedules.

Tank wagon price reductions at a few points in Standard of Indiana and Standard of New Jersey territories reflected local conditions only, and the trade in Tulsa had the opinion that Standard Oil Co. of Indiana's 2-cent general tank wagon reduction of May 10 had done much toward stabilizing refinery prices for gasoline. The trade felt that although jobbers' margins had been narrowed more by this reduction than by reductions in the past, because refinery prices showed no change after the tank wagon cut, it would be only a week or so before steady buying would be resumed.

Numerous jobber inquiries for June gasoline appeared this week, refiners reported. Few refiners, however, were willing to commit themselves over June and those that were willing, quoted 6.75 to 7 cents, which prices jobbers apparently considered too high as few if any sales could be found.

Quietude in the spot market did not bear gasoline prices. Several Oklahoma refiners endeavored to advance their quotations for 58-60 U. S. Motor gasoline to 6.75 cents a gallon got under way about the middle of this week, and today six of the larger companies were quoting this figure for all new business. They reported occasional sales at the new level.

An equal number of sellers continued to move the bulk of their current output at 6.50 to 6.625 cents. It was reported late this week hat three refiners were quoting 6.375 cents on small lots of 58-60 U. S. Motor, but these reports could not be confirmed.

Prices for all grades of natural gasoline advanced 0.25 to 0.50 cent. Inquiries for small lots were rather frequent early in the week and manufacturers advanced their prices as spot material was taken from the market. Demand toward the end of the week fell off somewhat but going prices for the small amount of material moving were higher rather than lower. Grade AA got most of the play this week and today a few cars were sold at 6 to 6.25 cents against 5.75 cents at the beginning of the week. Grade BB which sold Monday at 5 cents a gallon brought 5.50 cents today. Grade C was up 0.50 cent to 5.25 cents a gallon today.

Most north Texas refiners reported few buyers were in the market for gasolines. One refiner, however, reported he had had the best movement of high test gasolines to jobbers that he had had for several weeks. Friday he sold 40 cars of 64-66, 375 end point gasoline at 7 cents for northern shipment.

AN exporter who had an inquiry for a cargo of gasoline, took options on 1,000,000 gallons of 64-66, 390 end point goods with several north Texas refiners Thursday. As near as could be ascertained, no option was exercised. Monday 300,000 gallons of 64-66, 375 end point gasoline was purchased at 6.625 cents for export.

North Louisiana, Arkansas and Kansas refiners reported good movement of gasoline on contracts and a continued increase in spot demand. One Arkansas refiner Wednesday reported he had inquiries for 115 cars of gasoline for spot and deferred shipment that day. Refiners in the Shreveport district advanced their prices to 6.75 cents the middle of the week and reported a fair volume of trade at this figure. Most Kansas refiners were holding their 58-60 U. S. Motor gasoline at 7 cents for shipment within the state, but one or two sellers continued to quote and sell at 6.75 cents for state haul.

Considerable quanities of low gravity fuel oil, 14-16 and 16-18, were sold by Oklahoma refiners for spot and deferred shipment at prices ranging from $0.80 to $0.85 per barrel. Scattered sales of higher gravity fuels were reported all week.

Two railroads who customarily purchase their fuel oil requirements elsewhere, bought about 100 cars of 24-26 oil from north Texas refiners at $0.85 a barrel. Small quantities of this grade of fuel, offered by refiners in Wichita Falls early in the week at $0.825 cents a barrel, were quickly sold.

A scarcity of dirty cars for gas oil was reported to be holding up shipments of this oil and making it possible for those who could move cars to get a slight premium.

One Oklahoma refiner sold 50 cars of gas oil at 2.75 cents a gallon this week, but aside from this few sales of this commodity could be found, and no material for either prompt or deferred shipment was quoted at less than 2.75 cents.

Few buyers were in the market for cylinder stocks or neutral oils and refiners reported their list prices generally unchanged.

Small lots of 124-126 white crude scale were sold at 2.50 to 2.625 cents a pound. Exporters have "reduced" their ideas of the prices they will be willing to pay for requirements over a long period to around 2.25 to 2.375 cents.

Benzol Market Easier

NEW YORK, May 23.—The undertone of the motor benzol market was easier last week and there were persistent rumors current of price shading. The leading marketers, however, were still asking from 22 to 23 cents a gallon in tank cars at the ovens.

Unfavorable weather conditions have been hitting this market while the weakness in gasoline is also a depressing factor. Contract withdrawals have been fairly large but comparatively little fresh buying developed. Stocks of motor benzol are slightly in excess of the demand. Export demand was negligible last week. Pure and 90 per cent benzol were in routine demand at steady prices.

ST. JOSEPH, MO.—Penn Oil & Supply Co. has just moved into larger quarters in its new warehouse here, according to O. Salisbury, president.

P.I.W. STEEL PLATE CONSTRUCTION

Now Builds the

Pennsylvania Tank Car

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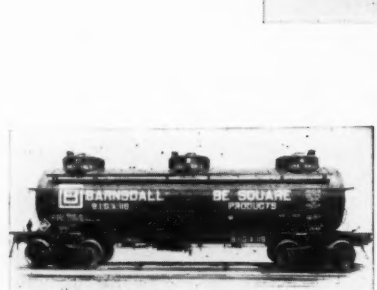

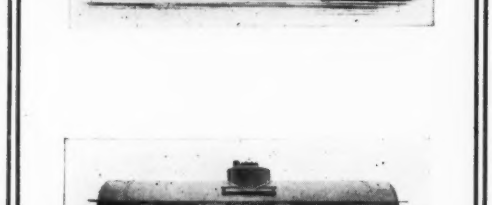

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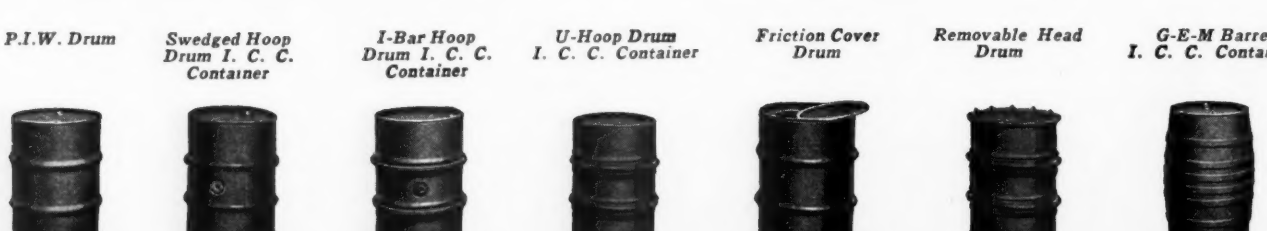
P. I. W. shipping containers range from tank cars to 15-gallon drums; P. I. W. storage tanks are built to hold up to 120,000 barrels; the Steel Plate Department produces stills, agitators, and steel plate equipment of all kinds.

Mass buying power, enormous manufacturing facilities, and an organization geared up to give rapid-fire volume production at short notice combine to give unusual service to the oil industry.

P. I. W. Service is World Wide

Branch Plant: Beaumont, Texas

P.I.W. Drum | *Swedged Hoop Drum I. C. C. Container* | *I-Bar Hoop Drum I. C. C. Container* | *U-Hoop Drum I. C. C. Container* | *Friction Cover Drum* | *Removable Head Drum* | *G-E-M Barrel I. C. C. Container*



The
PETROLEUM IRON WORKS COMPANY

NEW YORK
ST. LOUIS
SHARON, PA.
HOUSTON
TULSA

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices May 23	Prices May 16	Prices May 9
52-54 Naphtha	8.75 - 9.00	9.00 - 9.50	9.00 -10.00
54-56 Naphtha	9.00 - 9.50	9.00 - 9.50	9.00 -10.00
58-60 Gasoline	8.75 - 9.25	9.00 - 9.50	8.75 - 9.00
60-62 Str.-run gasoline	9.25 -10.00	9.25 -10.00	9.25 -10.00
64-66 Str.-run gasoline	10.00 -10.75	9.75 -10.50	9.75 -10.50
68-70 Str.-run gas. 350-360 E.P.	-11 00	10.75 -11.00	10.50 -11.50
68-70 Str.-run gas. 305-320 E.P.	-18 00	-18.00	-18.00
OKLAHOMA			
48-50 450 E. P. naphtha	6.25 - 6.50	- 6.25	- 6.25
50-52 450 E. P. naphtha	6.25 - 6.50	- 6.25	- 6.25
56-58 450 E. P. gasoline	- 6.25	- 6.25	- 6.25
56-58 U.S. Motor 437 E.P.	††- 6.25	††- 6.25	††- 6.25
58-60 450 E. P. gasoline	-†6.25	- 6.25	†- 6.25
58-60 U. S. Motor 437 E. P.	6 50 - 6 625	6.50 - 6.625	- 6.50
60-62 437 E. P. gasoline	6.50 - 6.75	*6.50 - 6.75	-*6.50
60-62 400 E. P. gasoline	6.75 - 7.00	6.75 - 7 00	- 6.75
64-66 390 E. P. gasoline	-†7.00	- 7.00	- 7.00
64-66 375 E. P. gasoline	†7.00 - 7.25	7.00 - 7.25	7.00 - 7.25
68-70 350-360 E. P. gas	7.50 - 7.75	- 7.50	7.50 - 7.75

†Prices Nominal. ††Only one refiner quoting. *Quotation only.

KANSAS*			
58-60 U.S.Motor 437 E. P.	6.75 - 7.00	6.75 - 7 00	6 75 - 7 00
60-62 400 E.P.gasoline	7.00 - 7.25	7.00 - 7.25	7.00 - 7.25
64-66 375 E. P. gasoline	- 7.50	7.50 - 7.75	7.50 - 7.75

*F. O. B. refinery Kansas destination.

NORTH TEXAS			
48-52 450 E. P. naphtha	-†6.00	-†6.00	-†6.00
56-58 450 E. P. gasoline	-†6.00	-†6.00	-†6.00
58-60 450 E. P. gasoline	6.00 - 6.125	6.00 - 6.125	- 6.00
56-58 U. S. Motor 437 e. p.	††- 6.25	††6.125- 6.25	††6.125- 6.25
58-60 U. S. Motor 437 e. p.	6.25 - 6.50	6.25 - 6.50	6.25 - 6.375
64-66 390 E. P. gasoline	- 6.75	- 6.75	- 6.75
64-66 375 E. P. gasoline	6.875 - 7.00	6.875- 7.00	6.875- 7.00
68-70 350-360 E. P. gasoline	*7.25 - 7.50	*7.25 - 7.50	†7.25 - 7.50

†Prices nominal. ††Only one refiner quoting. *Quotations only.

NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	- 6.75	- 6.50	- 6.50
ARKANSAS			
56-58 450 E. P. gasoline	- 6.25	- 6.25	- 6.25
58-60 450 E. P. gasoline	- 6.25	- 6.25	- 6.25
58-60 U. S. Motor 437 E. P.	6.875 7.00	6.875- 7.00	6.75 - 7.00
CALIFORNIA			
*54-58 U. S. Motor 437 E.P.	7.00 - 8.00	7.00 - 7.50	8.00 -11.50
*58-60 U. S. Motor 437 E.P.	8.00 - 9.00	8.00 - 9.00	9.00 -12.50
*42-45 Eng. dis. 445-480 E.P	- 7.00	- 7.00	7.00 - 7.50

*2c tax to be added if used in state.

NEW ENGLAND (F. O. B. Boston and Fall River)			
58-60 U. S. Motor gas	-10.08	-10.00	-10.25

NATURAL GASOLINE

(Note: End point of all grades, not over 375°F.)

OKLAHOMA			
Grade AA,80-87.9,90% Rec	- 6.25	- 5.75	- 5.00
Grade A,72-79.9,90% Rec.	- 6.25	- 5.75	- 5.00
Grade BB,84-92,85% Rec.	5.50 - 5.75	*- 5.00	4.375- 4.50
Grade B,76-83.9,85% Rec.	5.50 - 5.75	*- 5.00	4.375- 4.50
Grade C,80-90,78% Rec.	5.50 - 5.625	4.625- 4.75	*4.125- 4.25

†Prices Nominal. *Quotation only.

NORTH LOUISIANA			
*Grade AA	-†6.50	- 6.00	5.00 - 5.25
*Grade BB	†5.75 - 6.00	- 5 25	4.50 - 4.625
*Grade C	-†5.75	- 4.875	- 4.375

*F. O. B. Monroe District. †Prices Nominal.

NORTH TEXAS			
*Grade AA,80-87.9,90% Rec	- 6.25	- 5.75	- 5.00
*Grade A,72-79.9,90% Rec.	- 6.25	- 5.75	- 5.00
*Grade BB,84-92,85% Rec.	5.50 - 5.75	**- 5.00	4.375- 4.50
*Grade B,76-83.9,85% Rec.	5.50 - 5.75	**- 5.00	4.375- 4.50
*Grade C,80-90,78% Rec.	- 5.50	**- 4.625	†4.125- 4 25

*F. O. B. Breckenridge.
†Prices nominal. **Quotations.

CALIFORNIA			
75-85, 375-390 E. P. blend	6.00 - 8.00	6.00 - 8.00	5.50 - 7.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 E.P.	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
64-66 Blend 437 E.P.	9 00 - 9.50	9 00 - 9.50	9.00 - 9.50
60-62 Blend 437 E.P.	9 00 - 9.50	9.00 - 9.50	9.00 - 9.50
OKLAHOMA			
64-66 Blend 437 E.P.	6.125- 6.25	6.125- 6.25	6.125 - 6.25

BURNING OILS

PENNSYLVANIA			
45 w. w. kerosene	6.50 - 7.00	6.75 - 7 00	6.625- 7.00
46 w. w. kerosene	7.00 - 7.50	7.25 - 7.50	7.25 - 7.50
47 w. w. kerosene	7.50 - 7.75	7.50 - 7.75	7.50 - 8.00
OKLAHOMA			
41-43 w. w. kerosene	4 375- 4 50	- 4.50	4.375- 4 50
42-44 w. w. kerosene	4.75 - 4.875	- 4.75	- 4.75
KANSAS			
41-43 w. w. kerosene	- 5.50	- 5.50	5 25 - 5.50
42-44 w. w. kerosene	5.50 - 5.75	5.50 - 5.75	5.50 - 5.75
NORTH TEXAS			
40-42 w. w. kerosene	4.00 - 4.125	- 4 00	- 3 875
41-43 w. w. kerosene	4.25 - 4.375	4.25 - 4.375	4.00 - 4.25

†Prices nominal.

NORTH LOUISIANA			
41-43 w. w. kerosene	4.50 - 4.75	4.50 - 4.75	4 50 - 4.75
ARKANSAS			
41-43 w. w. kerosene	- 4.75	- 4.75	4.75 - 5.00
42-44 kerosene	- 5.00		
CALIFORNIA			
38-40 w. w. kerosene	5.50 - 6.50	5.50 - 6 50	5.50 - 6.00
NEW ENGLAND			
40-43 w. w. kerosene	None Available	None available	** 7.50

**Only one refiner quoting.

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)			
Vis.			
200 No. 3 Assoc. Filt	34.00 -35.00	34.00 -35.00	33.50 -34.00
180 No. 3 Assoc. Filt	30.50 -32.00	30.00 -31.00	†30.00 -31.00
150 No. 3 Assoc. Filt	28.25 -30.00	27.50 -28.50	28.00 -28.50
(Non-Viscous)			
34 Grav. 330-340 Flash	7 00 - 7.75	7 00 - 8.00	7.50 - 8.00
36 Min. Neut. 300-305 Flash	6.50 - 7.50	7.00 - 7.50	6.50 - 7.50

†Prices Nominal.

*OKLAHOMA (Viscosity at 100° F.)			
Vis. Color			
100—No. 2	5.75 - 7.50	5.75 - 7.50	5.75 - 7.50
150—No. 3	8.25 - 8.75	8.25 - 8.75	8.25 - 8.75
150—No. 4	8.00 - 8.25	8.00 - 8.25	8.00 - 8.25
180—No. 3	9.50 -10.25	9.50 -10.25	9.50 -10.25
180—No. 4	- 9.75	- 9.75	- 9.75
180—No. 5	9.50 - 9.75	9.50 - 9.75	9.50 - 9.75
200—No. 3	10.00 -11.00	10.00 -11.00	10.00 -11.00
200—No. 4	10.50 -10.75	10.50 -10.75	10.50 -10.75
200—No. 5	9.00 -10.50	9.00 -10.50	9.00 -10.50
220—No. 3	12.50 -13.50	12.50 -13.50	12.50 -13.50
220—No. 4	12.25 -12.50	12.25 -12.50	12.25 -12.50
220—No. 5	11.50 -12.00	11.50 -12.00	11.50 -12.00
240—No. 3	14.00 -15.00	14.00 -15.00	14.00 -15.00
240—No. 4	-13.50	-13.50	-13.50
240—No. 5	12.00 -13.00	12.00 -13.00	12.00 -13.00
280—No. 3	16.00 -17.00	16.00 -17.00	16.00 -17.00
280—No. 4	-15.25	-15.25	-15.25
280—No. 5	14.00 -15.00	14.00 -15.00	14.00 -15.00
300—No. 5-6	-17.00	-17.00	-17.00

*Represent quotations and sales.

GULF COASTAL (Viscosity at 100° F; pour test 0)			
Vis. Color			
100—No. 2 Unfilt. Pale	7.00 - 8.00	7.00 - 8.00	7.50 - 8.50
200—No. 3 Unfilt. Pale	10.50 -11.50	10.50 -11.50	10.50 -11.50
300—No. 3 Unfilt. Pale	11.50 -12.50	11.50 -12.50	11.50 -12.50
500—No. 3½ Unfilt. Pale	13.50 -14.50	13.50 -14.50	13.50 -14.50
750—No. 4 Unfilt. Pale	16.00 -16.50	16.00 -16.50	16.00 -16.50
200—No. 5½ Red Oil	8.50 - 9.50	8.50 - 9.50	8.50 - 9.50
300—No. 5½ Red Oil	10.00 -11.00	10.00 -11.00	10.00 -11.00
500—No. 6 Red Oil	11.50 -12.50	11.50 -12.50	11.50 -12.50
750—No. 6 Red Oil	14.50 -15.50	14.50 -15.50	14.50 -15.50

CALIFORNIA (Viscosity at 100° F.)			
Vis. Color			
100—No. 2	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
100—No. 3	7.50 - 8.00	7.50 - 8.00	7.50 - 8.00
200—No. 3	9.50 -10.00	9.50 -10.00	9.50 -10.00
300—No. 3	10.50 -11.00	10.50 -11.00	10.50 -11.00
450—No. 3-3½	13.00 -13.50	13.00 -13.50	13.00 -13.50
550—No. 3-3½	14.50 -15.00	14.50 -15.00	14.50 -15.00
600—No. 3-3½	15.00 -15.50	15.00 -15.50	15.00 -15.50
100—No. 5	- 6.50	- 6.50	- 6.50
200—No. 5	8.00 - 8.50	8.00 - 8.50	8.00 - 8.50
300—No. 5	9.00 - 9.50	9.00 - 9.50	9.00 - 9.50
400—No. 5	11.00 -11.50	11.00 -11.50	11.00 -11.50
500—No. 5	11.00 -11.50	11.00 -11.50	11.00 -11.50
600—No. 5	12.00 -12.50	12.00 -12.50	12.00 -12.50
700—No. 7	14.00 -14.50	14.00 -14.50	14.00 -14.50

CYLINDER STOCKS

*OKLAHOMA			
190-200 Vis.at210°Brt.St.	31.00 -32.00	31.00 -32.00	31.00 -32.00
150-160Vis.at210°Brt.St.	26.00 -28.00	26.00 -28.00	26.00 -28.00
600E.St.140-150Vis.—210°	17.00 -18.00	17.00 -18.00	17.00 -18.00
600St.Ref.OliveGreen	9.00 -10.00	9.00 -10.00	9.00 -10.00
600St.Ref.DarkGreen	7.00 - 8.00	7.00 - 8.00	7.00 - 7.25
BlackOil	- 5.00	- 5.00	4.75 - 5.00

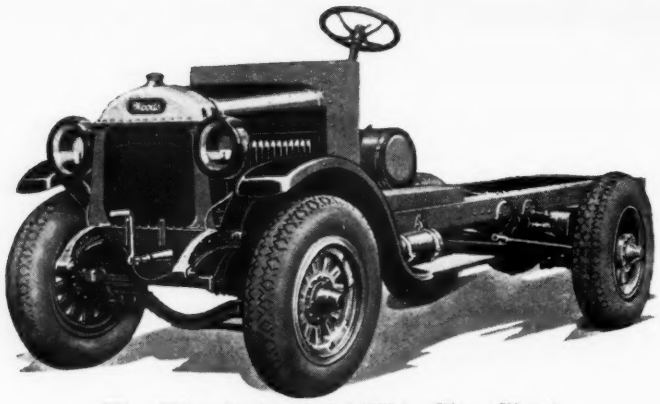
*Represent quotations and sales

PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	9.00 - 9.50	9.00 -10.00	9.00 -10.00
650 Steam Refined	13.00 -13.50	12.00 -13.50	12.00 -14.00
600 Flash	-17.00	17.00 -18.00	15.00 -18.00
625 Flash	-29.00	28.00 -29.00	28.00 -29.00
600 Warren E	18.50 -20.00	18.50 -20.00	19.00 -20.00
600 Oil City E	17.50 -18.00	17.50 -18.00	17.50 -18.50
600 D Filtered	25.00 -26.00	25.00 -26.00	25.00 -26.00
ColdTestStocks (brt. filt)	33 00 -34.00	33.00 -35.00	33.00 -34.00
Cold Test Stock (dark filt)	31.00 -32.00	31.00 -32.00	30.00 -32.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

LONG RESIDUUM STOCKS

PENNSYLVANIA			
60-65 vis. @ 210, 440-450 flash No. 5½ color	33.00 -34.00	33.00 -34.00	33.00 -34.00
70-75 vis. @ 210, 450-455 flash No. 6 color	34.00 -35.00	34.00 -35.00	34.00 -35.00
80-85 vis. @ 210, 440-450 flash No. 7 color	35.00 -36.00	35.00 -36.00	35.00 -36.00
80-85 vis. @ 210, 450-460 flash No. 7-8 color	36.00 -37.00	36.00 -37.00	36.00 -37.00
80-85 vis. @ 210, 460-465 flash No. 7 color	36.00 -38.00	36.00 -38.00	37.00 -38.00
95-100 vis. @ 210, 490-495 flash No. 8 color	-39.00	-39.00	-39.00



The Woods Model 36W4, (Two Ton)

Buda Engine (45HP), Counterbalanced crank-shaft permitting higher road speed and reducing vibration. 4-speed Brown-Lipe transmission and Timken full floating worm drive Rear Axle.

This model is built for a specific purpose—Heavy Duty hauling over bad roads. It has surplus power for trying conditions.

All the power you'll require—(and then some).

Built in 144 inch and 156 inch wheelbase.

Strength is dominant in Woods construction.

PATRIOT MANUFACTURING COMPANY

A Woods Brothers Company

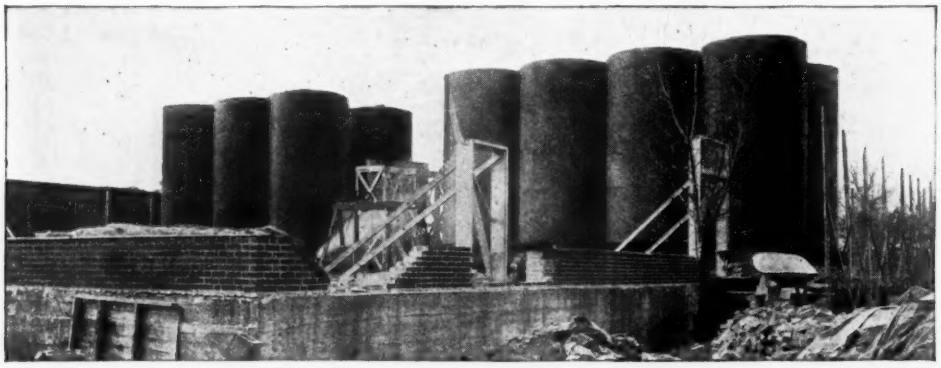
***Factory*—Havelock, Nebraska** **Lincoln, Nebraska**

MOTOR Woods TRUCKS

Others Envy What a Woods Will Do

BULK LUBRICATING OIL EQUIPMENT

Heated tanks, pumps, manifolds, compounding kettles



Complete service for refiners or jobbers. Guarantee thickness material. Double Electric welded and oil tight. Let us help you solve your problem in handling lubricating oil, fuel oil, distillate, gasoline, and etc.

BROWN SHEET IRON & STEEL CO.

964 Berry Ave. **St. Paul, Minn.**

DON'T DELAY—SIGN THE COUPON AND LET US KNOW WHAT YOU WILL NEED.

Check Items on which you want prices.

Complete Bulk Station_____ **Number of Tanks**_____ **Size**_____

Filling Station Tanks_____ **Size**_____ **Pumps**_____

Truck Tanks_____ **Size**_____ **Compts**_____

Other Equipment_____

Name_____ **Address**_____

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

WAX

*PENNSYLVANIA	Prices May 23	Prices May 16	Prices May 9
122-124 White Crude Scale.	- 3.00	2.75 - 2.875	2.75 - 3.00
124-126 White Crude Scale.	3.00 - 3.25	2.75 - 2.875	2.75 - 3.00
*Per Pound, New York			
***OKLAHOMA**			
*124-126 White Crude Scale	2.50 - 2.625	2.625 - 2.75	- 2.75
*Oklahoma wax represents quotations and sales prices.			
CALIFORNIA			
White Crude Scale.....	6.00 - 7.00	6.00 - 7.00	6.00 - 7.00

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	4.875 - 5.125	4.875 - 5.25	5.00 - 5.25
30-34 Fuel Oil.....	4.75 - 5.00	4.875 - 5.125	5.00 - 5.25
28-32 Fuel Oil.....	4.75 - 5.00	4.875 - 5.125	5.00 - 5.25
OKLAHOMA			
38-40 Straw distillate...	3.125-3.25	- 3.25	- 3.25
36-38 Straw distillate...	-3.00	- 3.00	- 3.00
32-36 Gas oil cracked....	-2.75	- 2.75	2.625- 2.75
32-36 str. reduced Gas oil	2.75 -2.875	2.75 - 2.875	- 2.75
28-30 Fuel oil (Bbl.).....	3.975-1.00	- 3.95	3 .95 - 1.00
26-28 Fuel oil (Bbl.).....	3.925- .95	3.925- .95	-3 .95
24-26 Fuel oil (Bbl.).....	- .925	- 3.925	-3 .925
22-26 Fuel oil (Bbl.).....	- .925	- 3.925	3 .90 - .925
18-22 Fuel oil (Bbl.).....	3.85 - .90	3.875- .925	-3 .90
16-18 Fuel oil (Bbl.).....	3.825- .85	.....	.....
14-16 Fuel oil (Bbl.).....	3.825- .85	.....	.....
†Prices nominal.			
KANSAS*			
38-40 straw distillate...	- 3.75	- 3.75	- 3.75
36-38 straw distillate...	- 3.25	- 3.25	- 3.25
32-36 Gas Oil.....	2.75 - 3.00	2.75 - 3.00	2.75 - 3.00
24-26 Fuel Oil.....	-$1.10	$1.10 - 1.15	$1.10 - 1.15
18-22 Fuel Oil.....3 .95	-$1.00	-$1.00	-$1.00
*F. O. B. refinery Kansas destination.			
NORTH TEXAS			
38-40 Straw distillate.....	- 3.00	- 3.00	- 3.00
32-36 Gas Oil (Gal.)cracked	- 2.625	- 2.50	- 2.50
32-36 uncracked gas oil...	2.625- 2.75	2.50 - 2.75	2.50 - 2.75
24-26 Fuel per (Bbl.)...3.85 - .90		3 .85 - .90	3 .85 - .90
GULF COASTAL			
Fuel.....$1.60 - 1.65		$1.60 - 1.65	$1.60 - 1.65
Gas Oil.....	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75

NORTH LOUISIANA	Prices May 23	Prices May 16	Prices May 9
32-36 Gas oil, cracked (Gal.).	- 3.00	- 3.00	2.75 - 2.875
32-36 Gas oil, uncracked (Gal)	3.00 - 3.25	- 3.125	3.00 - 3.125
16-20 Fuel Oil (Bbl.)...	$1.10 - 1.15	$1.10 - 1.15	$1.10 - 1.15
ARKANSAS			
28-32 Gas oil.....	3.25 - 3.50	3.25 - 3.50	3.25 - 3.50
32-36 Gas oil.....	3.50 - 3.75	3.50 - 3.75	3.50 - 3.75
*Smackover Crude Fuel	$1.10 -$1.15	$1.25 -1.15	$1.10-1.15
*For unrestricted shipment.			
CALIFORNIA*			
14-18 Fuel Oil (Bbl.)...	3 .75 - 1.00	3 .75 - 1.00	3 .75 - 1.00
14-18 Bunker Oil (Bbl.)	3 .80 - 1.00	3 .75 - 1.00	3 .75 - 1.00
30-34 Gas Oil (Bbl.)....	$1.05 - 1.05	$1.00 - 1.05	$1.00 - 1.05
27 + Diesel Oil (Bbl.).	$1.00 -$1.05	$1.00 -$1.05	$1.00 -$1.05
*(San Joaquin Valley, San Francisco 4c per bbl. more.)			
NEW ENGLAND (F. O. B. Boston and Fall River)			
30-32 Gas Oil (Gal.).....	- 6.00	- 5.75	- 5 97
Fuel Oil (Bunker C) Bbl...	-$1.87	-$1.87	-$1 87

PETROLATUMS

PENNSYLVANIA (Cents Per Pound in Tank Cars)*

Snow White.....	7.25 - 7.50	7.25 - 7.50	7.25 - 7.50
Lily White.....	- 6.25	- 6.25	- 6.25
Cream White.....	- 5.25	- 5.25	- 5.25
Light Amber.....	2.625- 2.75	2.625- 2.75	2.625- 2.75
Amber.....	2.375- 2.50	2.375- 2.50	2.375- 2.50
Red.....	- 2.125	- 2.125	- 2.125
Green No. 5 Color.....	- 1.50	- 1.50	- 1.50
*In barrels .75c a pound more, carlots.			

*PETROLEUM COKE

OKLAHOMA
(Per ton in carlots)

Lump.....	-$5.00	-$5.00	-$5.00
Breeze.....	- 2.00	- 2.00	- 2.00
Still Run.....	- 3.00	- 3.00	- 3.00

*Represent quotations and sales.

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Seaboard Gasoline Prices Lack Buoyancy but Demand Rises

By Special Correspondent

NEW YORK, May 23

BULK gasoline price structure was weaker last week although consumption continued to gain. The majority of New York Harbor refiners were asking 9 cents a gallon for U. S. Motor in tank cars but one big Philadelphia Independent was offering on a basis of 9¾ cents a gallon in tank cars delivered New York.

At Philadelphia some refiners advanced their quotations on U. S. Motor gasoline to 9½ cents a gallon, refinery, early in the week but other factors were offering as low as 8½ cents a gallon, terminal. Jobbers are doing a good business but are keeping their purchases as close to requirements as possible. The tank wagon price reductions in Virginia and Kentucky have tended to add to the depression and there was a persistent report in New York that New York and New Jersey gasoline tank wagon prices would be lowered shortly. Upstate buyers have been taking little.

Reports were that California cargoes could have been laid down here below 8 cents a gallon but these lacked confirmation. California gasoline in tank cars was quoted at 8¾ to 9 cents a gallon at New York Harbor terminals.

The Gulf market was weak and demand was mainly hand-to-mouth. U. S. Motor was held at 7¼ cents a gallon in tank cars, refineries.

Kerosene demand was disappointing and prices were 0.25 to 0.75 cents a gallon lower. Prime white 41-43 gravity was available at 6.75 cents a gallon, refineries. The 43-45 water white was available at 7 cents, refineries.

Gulf refiners reported an inactive kerosene market. Business was almost entirely hand-to-mouth and no sizable movements were reported. Stocks on hand are heavy and 44 water white was freely offered at 6.25 cents a gallon and 41-43 water white at 5.25 cents.

HOUSTON—Mr. and Mrs. John R. Herr of Houston announce the birth of a daughter, Rose Marie, weight seven pounds, May 17, last. Mr. Herr is Houston district sales manager of the Sinclair Refining Co.

Exports from Tampico District

Company	March	April
Transcontinental Petroleum Co., (Standard of New Jersey)	219,091	748,771
Pan American Eastern Oil Co.	1,687,917	1,952,488
Mexican Eagle Oil Co., (El Aguila)	806,329	1,000,916
Cia. Mexicana Holandesa "La Corona"	602,970	871,733
The Texas Co. of Mexico, S. A.	85,727	147,629
Mexican Gulf Oil Co.	173,297	97,439
Sinclair Mexican Companies	492,795	569,616
East Coast Oil Co. of Mexico, S. A., (Southern Pacific)	51,458	76,333
Pierce Oil Corp.	2,430	1,348
Mexican Atlas Oil Co	41,681	76,225
La Espuela Oil Co	113,574	93,803
Moctezuma Terminal	20,892	.....
New England Fuel Oil Co	48,898	.....
Panuco Boston Oil Co.	48,794	.....
Mexican Oil Products Co.	.....	21,829
Totals	4,395,853	5,598,130

Jobbers Ask Prices for Future Gasoline and Gas Oil Needs

Staff Special

CHICAGO, May 21

GAS oil firmed near the end of this week in the Chicago resale market but prices of other products were steady in spite of light spot buying. Movement of gasoline this week was comparatively small which the trade attributed to inclement weather.

Jobbers also are inquiring for next winter's domestic gas and fuel oil needs. Many sellers report inquiries on hand, and two refiners estimated their gas oil queries were for 10,000,000 gallons. One marketer was offering terms of market date of shipment with a maximum price. A refiner was quoting the average on date of shipment of Platt's Oilgram.

Several large consumers were inquiring on gas oil. A gas company asked prices for 3,000,000 gallons of gas oil over four months; one industrial was in the market for 150,000 gallons gas oil for July, and another industrial wanted 1,000,000 gallons fuel oil monthly over a year. One refiner reported several queries for 300 to 500 cars, and also 200 to 250-car inquiries for 28-30 fuel oil for next winter. This refiner said he could not quote on future fuels until about the middle of June.

The 38-40 straw distillate advanced 0.125 cent to 3.25 cents Monday, was 3.25 to 3.375 cents today. Gas oil, 32-36 dark, was 2.75 cents Monday, 2.75 to 2.875 cents Tuesday, and 2.75 to 3 cents today. The 32-36 straw gas oil was 2.875 to 3.125 cents through Thursday and sold today at 3 to 3.125 cents.

Fuel oil continued quiet at unchanged prices. The 28-30 fuel was $1.00 to $1.025; 24-26 grade $0.95; 22-26 fuel $0.925 to $0.95; and 18-22 fuel $0.875 to $0.925. Smackover was unchanged at $1.15 with the market one of quotations.

U. S. Motor gasoline was 6.50 to 6.625 cents. Future inquiries were more active. Jobbers were shopping for gasoline over June, but no contracts were reported signed. One refiner today said he could get 10 cars of U. S. Motor gasoline over June which he could broker at 6.625 cents. A carload marketer reported having two refinery sources from which he could offer U. S. Motor at 6.75 cents over the first half of June. Marketers generally reported refiners were reluctant to quote on next month's gasoline.

Prices of high test gasolines were generally steady. The 60-62, 437 e.p. grade was 6.50 to 6.625 cents early in the week, and 6.50 to 6.75 cents on and after Wednesday; the 60-62, 400 e.p. gasoline was 6.875 to 7 cents; 64-66, 375 e.p. 7.25 cents, and 68-70, 350-360 e.p. 7.50 to 7.75 cents. More high test sales were reported this week than last, especially of 64-66, 375 e.p. grade.

Water white 41-43 kerosene was 4.50 to 4.625 cents.

Occasional showers are predicted for next week in Standard Oil Co. of Indiana territory with warm temperatures in southern part and mostly cool in northern part.

Heads New Company

NEW YORK, May 21.—C. P. Watson, assistant to the president of the Amerada Petroleum Corp., has resigned effective June 1 to become president of the newly organized Federal Royalties Co. He will maintain headquarters in Fort Worth and will function as the operating head of the company.

Executives of oil companies have subscribed about 30 per cent of the authorized capital stock of the company, which consists of 40,000 shares, par value $10. Of the authorized stock, 35,000 shares are being sold. The common stock, is the only form of security being issued. The operations will be confined to the Mid-Continent and West Texas territories.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Indiana—T.w. and s.s. prices gasoline reduced 2 cents, Mankato, to 15.1 cents and 17.1 cents respectively, **May 19.** Gasoline prices reduced 1.9 cents, Fargo, to 17 cents t.w. and 19 cents s.s., **May 11.**

Standard of Nebraska—T.w. price gasoline advanced 1 cent, s.s. price cut 2 cents, Omaha, both to 16.25 cents, **May 16.**

Magnolia Petroleum—T.w. and s.s. prices gasoline reduced 2 cents generally through Oklahoma, bringing points listed in accompanying tank wagon table to 14 cents and 17 cents respectively, **May 16.** Gasoline prices at Fort Worth reduced 1 cent, to 13 cents t.w., and 16 cents s.s., **May 16.**

Continental Oil—T.w. price gasoline reduced 1 cent, s.s. price 2 cents, Pueblo, both to 16 cents, **May 19.**

Standard of Louisiana—T.w. and s.s. prices gasoline reduced 4 cents, Memphis, to 13 cents and 16 cents respectively, including 3 cents tax, **May 19.**

* * *

Kerosene Changes

Standard of Kentucky—T.w. price kerosene reduced 1 cent, Atlanta, to 15 cents, **May 16.**

Magnolia Petroleum—T.w. price kerosene reduced 1 cent, Fort Worth, to 10 cents, **May 18.**

* * *

Correction

Price of oleum spirits, V.M. & P. naphtha and cleaner naphtha at Kansas City, as published on the tank wagon page in the issues of April 27, May 4 and 11, have been in error. Prices should have been 1 cent lower than those shown since April 18. Correct prices are: oleum spirits, 16.2 cents; V.M. & P. naphtha and cleaner naphtha, 18.2 cents.

Bidding is Keen for Ohio Gasoline Business

CLEVELAND, May 23.—Competition for tank car sales of gasoline in Ohio has become keener in the last few weeks and business has been lost on some low quotations, sellers say. U. S. Motor gasoline has been quoted at 9.81 cents delivered in central Ohio over the first half of June. This gasoline, it is said, will not come from the Mid-Continent but is on a basis of 6.25 cents, Group 3.

One broker was offering today a few spot cars of U. S. Motor on a basis of 6.125 cents Group 3. One Ohio refiner was selling gasoline, said to meet all U. S. Motor specifications, at delivered prices which were equivalent to 5.80 to 6.05 a gallon in central Ohio at 9 cents delivered, the equivalent of 5.44 cents Group 3. This gasoline came from outside the group.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

These Prices In Effect May 23, 1927

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	0	16	*	14
Newark, N. J.	16	0	16	18	14
Annapolis, Md.	16	4	20	*	14
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	14	2	16	17	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	14
Richmond, Va.	16	4½	20.5	23.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Williamsburg, Va.	16	4½	20.5	*	14
Charleston, W. Va.	16	3½	19.5	22.5	14
Clarksburg, W. Va.	16	3½	19.5	22.5	14
Keyser, W. Va.	16	3½	19.5	*	14
Parkersburg, W. Va.	16	3½	19.5	22.5	14
Wheeling, W. Va.	16	3½	19.5	22.5	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
High Point, N. C.	16	4	20	*	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	20	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	19	0	19	23	15
Albany, N. Y.	19	0	19	21	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	15	0	15	18	14
Syracuse, N. Y.	19	0	19	21	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	19	3	22	25	15
Manchester, N. H.	17	2	19	21	15
Burlington, Vt.	19	2	21	23	15

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*21	14
Philadelphia, Pa.	14	*	14	*18	14
Allentown, Pa.	16	*	16	*21	14
Erie, Pa.	14	*	14	*19	14
Scranton, Pa.	16	*	16	*21	14
Altoona, Pa.	16	*	16	*21	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	1	18	20	15
Boston, Mass.	17	0	17	19	15
Springfield, Mass.	17	0	17	19	15
Worcester, Mass.	17	0	17	19	15
Hartford, Conn.	19	2	21	23	15
New Haven, Conn.	19	2	21	23	15

*2-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	14	5	19	22	15
Covington, Ky.	15	5	20	23	15.5
Clarksdale, Miss.	13	4	17	20	13.5
Gulfport, Miss.	††13.5	4	††17.5	21.5	14
Jackson, Miss.	13	4	17	20	14.5
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.	14	4	18	21	15.5
Mobile, Ala.	13	4	17	20	15
Montgomery, Ala.	15	4	19	22	*16.5
Atlanta, Ga.	†14	3½	18	21	15
Augusta, Ga.	†15	3½	19	22	16
Macon, Ga.	†15	3½	19	22	16
Savannah, Ga.	†14	3½	18	20	14
Jacksonville, Fla°	13	4	17	20	14
Miami, Fla°	15	4	19	22	15.5
Tampa, Fla°	12	4	16	19	14
Pensacola°	**14	4	**18	21	15

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

°Florida gasoline prices include ½c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	10.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	2	16.8	18.8	13.7
Grand Rapids, Mich.	14.7	2	16.7	18.7	13.6
Saginaw, Mich.	14.9	2	16.9	18.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	15.2	2	17.2	19.2	12.9
Duluth, Minn.	15.5	2	17.5	19.5	12.9
Mankato, Minn.	13.1	2	15.1	17.1	12.7
Des Moines, Iowa	14	2	16	18	12.3
Davenport, Iowa	14.5	2	16.5	18.5	12.3
Sioux City, Iowa	14.1	2	16.1	18.1	11.9
Mason City, Ia.	14.5	2	16.5	18.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†14.9	2	16.9	18.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	11.2
Fargo, N. D.	15	2	17	19	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	3	18.5	20.5	13.9
Huron, S. D.	12.5	3	15.5	17.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.8	3	15.8	17.8	10.8

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month, 3c, except latter discount does not apply in Chicago.

Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.

March 1, 1c discount on kerosene in 50 gal. dumps thru territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	16.25	12.25
McCook	15.75	2	17.75	19.75	13.75
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.25	2	17.25	19.25	13

CONTINENTAL OIL

Denver, Colo.	14	3	17	18	15.5
Pueblo, Colo.	13	3	16	16	15.5
Grand Junction, Colo.	17.5	3	20.5	22.5	19
Casper, Wyo.	15	3	18	20	14
Cheyenne, Wyo.	15	3	18	20	15.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
SaltLake City, Utah.	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	18

S. O. CALIFORNIA

Phoenix, Ariz.	18	3	21	23	21.5
Los Angeles, Cal.	12.5	2	14.5	18.5	15.5
Fresno, Cal.	13	2	15	19	16.5
San Francisco, Cal.	13	2	15	19	15.5
Reno, Nev.	17	4	21	25	19
Portland, Ore.	13.5	3	16.5	20.5	16.5
Seattle, Wash.	13.5	2	15.5	19.5	16.5
Spokane, Wash.	17.5	2	19.5	23.5	20.5
Tacoma, Wash.	13.5	2	15.5	19.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	13	4	17	20	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	*13.5	2	*15.5	*18.5	*14
Shreveport, La.	12	2	14	17	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	13.5	3	16.5	19.5	15
Memphis, Tenn.	10	3	13	16	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene prices in Louisiana include 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	16	2	18	20	15

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	3	14	17	10
Oklahoma City	11	3	14	17	10
Tulsa, Okla.	11	3	14	17	10
Fort Smith, Ark.	13	4	17	20	12
Little Rock, Ark.	13	4	17	20	12
Texarkana, Ark.	†15	4	†*19	†*19	12
Dallas, Tex.	†13	3	†16	†16	11
Fort Worth, Tex.	†13	3	†16	†16	10
Houston, Tex.	††16	3	††19	††19	15
San Antonio, Tex.	†13	3	†16	†16	11
El Paso, Tex.	**16	3	**19	**19	16

*Within city of Texarkana the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

†3c per gal. discount to dealers.

**2c per gal. discount to dealers at El Paso, Feb 28.

††4c per gal. discount to dealers at Houston, March 16, 1927.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	16	18	18
Detroit	17.7	19.7	19.7
Kansas City	16.2	†18.2	†18.2
Milwaukee	16.7	*20.7	*20.7
Minneapolis	*20	*22	*22
St. Louis	15.9	17.9	17.9
New York	..	19	

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	21.5	3	24.5	28	21
Ottawa	21.5	3	24.5	28	21
Cochrane	26.5	3	29.5	38	26
Ft. William	24.5	3	27.5	31	23.5

MANITOBA

Winnipeg	24.5	3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5	0	27.5	32	27.5

ALBERTA

Edmonton	26.5	3	29.5	33	25.5
Calgary	24.5	3	27.5	31	23.5

BRITISH COLUMBIA

Vancouver	20	3	23	27	21

QUEBEC

Montreal	21.5	3	24.5	28	21
Quebec City	23.5	3	26.5	30	23
Three Rivers	23.5	3	26.5	30	23

NEW BRUNSWICK

St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24

NOVA SCOTIA

Halifax	24.5	3	27.5	32	24
Sydney	26.5	3	29.5	34	26

PRINCE EDWARD ISLAND

Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Foreign Buyers Wary of Gasoline Market Interest in Lubes is Keener

By Special Correspondent
NEW YORK, May 23

DUE to the weakening in bulk gasoline export demand again slumped last week and little foreign buying interest was manifested in either the Gulf or Atlantic seaboard markets. Prices quoted by the big refiners were virtually the same as the previous week but there was more disposition to make concessions. California gasoline could have been laid down along the Atlantic Seaboard at 7⅝ cents a gallon in cargo lots. Kerosene was weaker at New York but steady at Gulf ports. Gas oil was soft but there was a marked improvement in the export demand for waxes. Lubricating oils were steady under a slightly better demand.

Export Gasoline—New York

Export demand for gasoline lagged. Buyers with foreign connections, however, are showing more interest but are not inclined to buy on the present weak market. The fact that the leading refiners have been asking 9 cents a gallon has failed to influence buyers.

Philadelphia refiners have been asking 9 to 9½ cents but brokers have been offering as low as 8½ cents a gallon. Cased gasoline demand lagged. Most of the big buyers showed little or no interest at the prevailing prices. The contract movement was heavier. Fresh buying orders were chiefly from the Levant and Near East, calling for from 10,000 to 20,000 cases.

Export Gasoline—Gulf Ports

Export demand for gasoline was not as active as the previous week when one of the leading refiners sold four mixed cargoes to a large French concern. However, the latter, which has Spanish connections was in the market for 45,000 barrels of U. S. Motor, 61-63 gravity 390 e.p. gasoline and 41-43 water white kerosene for July 15-Aug. 15 shipment. One of the leading Independent refiners expects to book this order shortly.

At the close of the week U. S. Motor ranged from 7⅛ to 7¼ cents while 60-62 gravity 400 e.p. was quoted from 7¾ to 7½ cents and 61-63 gravity 390 e.p. from 7⅜ to 7¾ cents. For 64-66 gravity 375 e.p. the asking price was 8⅛ to 8¼ cents a gallon, bulk cargoes. Cased gasoline was very quiet with the exception of one sale of 40,000 cases of motor and 64-66 gravity 375 e.p. to a large Australasian buyer by a leading Independent refiner. Cased motor was quoted at $1.65 and 64-66 gravity 375 e.p. at $1.75 a case, cargo lots.

Export Kerosene—New York

Export demand for kerosene lagged throughout the week. There were no bulk inquiries and business was mainly against standing contracts. Barreled kerosene was in small demand. One of the leading Independents reported a slightly better demand from the west coast of Africa for cased kerosene but most of these orders were for less than 10,000 cases. South American buyers have been inquiring more actively but purchased little or nothing. A Chinese buyer was inquiring for 50,000 cases of prime and water white but this has not yet been closed. Bulk water white 41-43 gravity was available at 6¾ cents a gallon at the close of the week while 43-45 water white was held at 7 cents a gallon, refinery.

Export Kerosene—Gulf Ports

Export demand for kerosene did not show any improvement. An inquiry for 40,000 barrels of prime and water white August shipment to the Continent failed to materialize. Prices were easy at the close of the week with 41-43 water offered at 5⅛ to 5¼ cents and 44 water at 6⅛ to 6¼ cents a gallon. Cased kerosene marked time. A Japanese buyer purchased 25,000 cases of prime and water for July shipment. Leading refiners reported a slump in cased goods.

Prime in cases was $1.45 and water $1.55 a case in cargoes.

Lubricating Oil—New York

Export interest in lubricating oils was keener last week. French buyers have been inquiring more actively for red and pale engine oils while the demand for bright stock and cylinder oils is also more active. Pennsylvania 600 s.r. unfiltered cylinder oil has been in good demand at 17 cents a gallon in barrels, New York. No. 300 red engine oil at 100-6½ color was steady at 22 cents a gallon in barrels, New York. Domestic demand for these oils has been more active the past few days.

Lubricating Oil—Gulf Ports

Texas lubes have been in slightly better demand the past week, although foreign buyers are still buying in very limited quantities. No bulk sales were disclosed but with domestic consumption on the increase there is less talk of an impending reduction in prices. Foreign buyers are following the market closely but are apparently looking for lower prices soon. Refiners are optimistic and feel that Europeans will be forced into the market shortly, owing to the small stocks abroad.

Wax Market—New York

Considerable improvement was reported in the condition of the New York wax market last week. The export demand has picked up considerably as a result of the low prices and many sales of 100-ton lots were reported with England, South America and China the principal buyers. Prices were a shade higher and sentiment is more optimistic than it has been in months. Some local sellers are still bearish, feeling that the present buying movement will die out shortly but the majority of refiners feel that there will be a fair movement for some time.

Wax Market—Gulf Ports

Export demand has improved considerably, although domestic buying is still along very conservative lines and no sizable movements were reported. Prices are firmer and the consensus of trade opinion is that the worst is past. Stocks of waxes are heavy but refiners are less disposed to press sales.

At the close of the week, white crude scale 124-126 A.m.p. was quoted at 2⅞ cents; gallon crude scale 124-126 at 2⅞ cents while 124-126 semi-refined is held at 2.95 cents a pound. The fully refined grades were quoted as follows: 123-125 and 125-127 A.m.p. at 4 cents; 128-130 at 4⅛ cents; 133-135 A.m.p. at 5⅛ cents and 135-137 A.m.p. at 5⅝ cents a pound.

Bunker Oil—New York

New York harbor refiners reported heavier contract withdrawals but a slump in demand for spot deliveries. Consumption of grade C bunker oil is fully as heavy as expected for this time of the year but the weakness in crude oil has caused many factors to withhold their orders and these interests are buying along hand-to-mouth lines. Prices were fairly well maintained and grade C was $1.75 a barrel and $1.81½ f.a.s. while Diesel oil was weak at $2.30 a barrel refinery.

Bunker Oil—Gulf Ports

Bunker oil, although weak, remained unchanged last week. The export demand has not shown any improvement. Stocks are heavy and foreign buyers apparently feel that the market is due for a break, owing to the weakness in bunker oil cargo prices. For bunkering purposes the price was $1.55 a barrel while in cargoes $1.35 was quoted. Heavy Panuco crude was quoted at $1.18 a barrel f.o.b. Tampico, taxes to be added while grade C bunker oil for bunkering purposes was quoted at $1.55

Complete Export Markets

New York Export Market

GASOLINE	May 23	May 16
U. S. Motor f. o. b. New York Harbor	9.00	– 9.00
U. S. Motor cases	24.40	24.40
KEROSENE		
43-45 150 W. W. Bulk Ref.	7.00	–7.75
41-43 Prime White Bulk Ref.	6.75	7.00–7.50
43-45 150 W. W. Cases	17.15	17.15
42-44 110 S. W. Cases	16.15	16.15
GAS OIL		
36-40 Bulk Refinery	5.75	5.75
28-34 Bulk Refinery	5.50	5.50
MEXICAN BUNKER OIL		
Grade C. f. o. b. ref. Bulk	–$1.75	–$1.75
Diesel Oil f. o. b. ref. Bulk	–$2.30	–$2.30

LUBRICATING OILS

The following are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (per Gallon in Barrels)

1 inch Immersion Test; All Penna. Products		
Bright Stock dark	39.00	39.00
Filtered D 600	32.50	32.50
Filtered E 600-Warren	25.50	25.50
Unfiltered 600 s. r.	17.00	17.00
Unfiltered 650 s. r.	19.00	19.00
600 Flash s. r.	23.00	23.00
650 Flash	35.00	35.00

RED ENGINE OILS (Per Gallon in Barrels)

(Viscosity at 100°)		
300 Vis. No. 6½ color	22.00	.....
250 Vis. No. 6 color	21.50	.....
200 Vis. No. 6 color	20.00	.....

PALE ENGINE OILS (Per Gallon in Barrels)

(Viscosity at 100°)		
230 Vis. No. 3¾ color	26.00	.....
180 Vis. No. 3¼ color	21.50	.....
100 Vis. No. 2¼ color	16.75	.....

MOTOR OILS (Per Gallon in Barrels)

(Viscosity at 100°)		
600 No. 6 color	37.00	.....
500 No. 7 color	36.00	.....
400 No. 6½ color	33.00	.....
300 No. 6 color	29.00	.....
200 No. 3¾ color	23.50	.....

MEDICINAL OILS (Includes Price of Drums) (Penna Stocks)

	May 23	May 16
Domestic 875-.885 s. g.	– .85	– .85
Domestic 865-.870 s. g.	$ .75 – .80	$ .75 – .80
Russian 885-.890 s. g. 325-330 vis.	$1.00 – 1.10	$1.00 – 1.10

WAXES (Penna Stocks) (In Cents per Pound, F. A. S. Carload Lots)

WHITE CRUDE SCALE (Shipped in Bbls.)		
122-124 A. m. p.	– 2.875	– 2.75
124-126 A. m. p.	– 3.00	– 2.875
FULLY REFINED (Shipped in Burlap Bags)		
123-125 A. m. p. Philadelphia	– 4.125	– 4.00
125-127 A. m. p.	– 4.125	– 4.00
128-130 A. m. p.	– 4.375	– 4.125
130-132 A. m. p.	– 4.625	– 4.375
133-135 A. m. p.	– 5.500	– 5.125
135-137 A. m. p.	– 5.750	– 5.50
YELLOW CRUDE SCALE		
124-126 A. m. p.	– 2.875	– 2.70
PETROLATUMS (Penna Stocks) Per Pound		
Dark Green	– 2.00	– 2.00
Veterinary	– 3.125	– 3.125
Light Amber	– 3.750	– 3.750
Dark Amber	– 3.375	– 3.375
Cream	– 5.75	– 5.75
Lily White	– 7.50	– 7.50
Snow White	– 8.50	– 8.50

Gulf Export Market

GASOLINE F. O. B. Gulf Oil Terminals, Texas and Louisiana (Shipments of 20,000 Bbls. and over)

	May 23	May 16
U. S. Motor Bulk	7.125–7.25	7.25
60-62 400 e. p. Bulk	7.375–7.50	7.50
61-63 390 e. p. Bulk	7.625–7.75	7.75
64-66 375 e. p. Bulk	8.125–8.25	8.25
U. S. Motor, Cases (cargo lots)	$1.65	$1.65
64-66 Cases (cargo lots)	$1.75	$1.75
KEROSENE		
Water White, 43-45 Bulk	6.125	6.25
Prime White, 41-43 Bulk	5.125	5.25
Water White, cases (cargo lots)	$1.55	$1.55
Prime White, cases (cargo lots)	$1.45	$1.45
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, Bulk*	4.125	4.125
32 plus, bulk, Dark	4.00	4.00
Grade C, Bunker oil	$1.55	$1.55
Cargoes	$1.33	$1.33

*Translucent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS F. O. B. Steamer Tampico

Heavy, Panuco crude Taxes to be added	$1.18
Grade C, Bunker oil, F. O. B. Tampico, For Bunkering Purposes, taxes paid.	$1.60

SOUTH TEXAS (Viscosity at 100° F; cold test 0) (Tanker, F. O. B. Houston)

LUBRICATING OILS	May 23	May 16
100 Vis. No. 2 Unfiltered Pale	6.50	6.50
150 Vis. No. 2½ Unfiltered Pale	9.00	9.00
200 Vis. No. 3 Unfiltered Pale	9.50	9.50
300 Vis. No. 3 Unfiltered Pale	10.50	10.50
500 Vis. No. 3½ Unfiltered Pale	13.00	13.00
200 Vis. No. 5½ Red Oil	8.00	8.00
300 Vis. No. 5½ Red Oil	9.00	9.00
500 Vis. No. 6 Red Oil	11.00	11.00

Pacific Export Market

(Cargo lots quotations at seaboard, Los Angeles Gravity test on A.P.I. scale)

	May 23	May 16
Gasoline, U. S. Motor—53°-55°	6.00– 7.00	6.00– 7.00
Gasoline, U. S. Motor—blends and special cuts	7.00– 8.00	7.00– 8.00
Gas Oil, 30°—34° bbls.	$1.00 – 1.05	$1.00 – 1.05
Diesel Oil, 27°—plus bbls.	$ .95 – 1.05	$ .95 – 1.05
Bunker Oil, 14°—18° bbls.	$ .75 – .85	$ .70 – .75
Fuel Oil, 14°—18° bbls.	$ .70 – .75	$ .70 – .75
Kerosene, W. W. 38°—40°, 125-150 flash test (Gals.)	.05 – .06	.05 – .06
Cased Goods		
Gasoline, U. S. Motor	$2.00 – 2.25	$2.00 – 2.25
Kerosene, W. W. 38°—40°, 125-150 flash	$1.50 – 1.60	$1.50 – 1.60

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries being products made from Domestic (including California) and Mexican Crudes

GASOLINE	May 23	May 16
U.S.Motor tankcars, f.o.b. N.Y.refinery	8.75– 9.00	– 9.00
U.S. Motor, tankcars, del'v'd Greater N. Y.	9.75– 10.00	–10.00
California U. S. Motor, cargoes, laid down N. Y. cost price	7.375	.....
Philadelphia, U. S. Motor, tankcars, f. o. b. Phila. refinery	8.50– 9.25	.....
Philadelphia U. S. Motor, tank cars delvd. nearby trade	9.50– 10.25	.....
KEROSENE		
43-45 150 W.W.Tank Cars de'd greater N. Y.	– 8.00	– 8.75
41-43, Buk Ref. Prime	– 6.75	7.00– 7.50
FUEL OILS		
Grade C Bunker f. o. b. N. Y. Ref.	–$1.75	–$1.75
Diesel Oil f. o. b. Refinery	–$2.30	–$2.30
Gas Oil, 36-40, Bulk Refinery	– 5.75	– 5.75
Gas Oil, 28-34, Bulk Refinery	– 5.50	– 5.50
Furnace Oil, 38-42, Bulk, Refinery	– 6.50	– 6.50
Furnace Oil from Tank Wagons	– 11.00	– 11.00

to $1.60 a barrel f.o.b. Tampico including the taxes.

Gas Oil—New York

Export demand for gas oil failed to show any improvement and business was largely hand-to-mouth. Stocks are heavy, and the cracking outlook is not as bright as it was a year ago. New York harbor refiners were offering 36-40 at 5¾ cents a gallon and 28-34 at 5½ cents a gallon in bulk f.o.b. refineries.

Gas Oil—Gulf Ports

The export demand for gas oil was very disappointing last week. There was a rumor current that one of the leading Independent refiners had sold a cargo of 45,000 barrels of 26-28 red translucent gas oil for June shipment to the United Kingdom but details and confirmation were lacking. Refiners were offering 32 plus dark oil at 4 cents and 32 plus red translucent at 4¼ cents a gallon.

Petrolatums

Export inquiries for snow white petrolatum were more numerous but actual demand lagged and prices were easy. Lily white was moving a trifle more freely at steady prices. Medicinal oils remained quiet.

Crude Oil Prices, as Posted by Major

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.90
Bradford District Oil in National Transit Lines (Bradford District)	2.90
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.75
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.60
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1, 1922 takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.77	Plymouth	$1.83
Lima	1.71	Western Kentucky	1.33
Waterloo	1.35	*Canadian Petrolia	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields except that Humble is paying 2c less for each degree of gravity on oil below 28°.

Mirando, Tex	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Effective May 5

Below 33	$1.05	43-43.9	$1.27
33-33.9	1.07	44-44.9	1.29
34-34.9	1.09	45-45.9	1.31
35-35.9	1.11	46-46.9	1.33
36-36.9	1.13	47-47.9	1.35
37-37.9	1.15	48-48.9	1.37
38-38.9	1.17	49-49.9	1.39
39-39.9	1.19	50-50.9	1.41
40-40.9	1.21	51-51.9	1.43
41-41.9	1.23	52 and above	1.45
42-42.9	1.25		
Corsicana heavy			$1.00

Carter Oil Co.

(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective March 14

Hutchinson, and Carson Counties			$0.95
Gray and Wheeler Counties:			
28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS

(Crane, Upton and Crockett Counties)

Humble Oil & Refining Co.

Effective March 14

Below 26	$ .70	31-31.9	$ .82
26-26.9	.72	32-32.9	.84
27-27.9	.74	33-33.9	.86
28-28.9	.76	34-34.9	.88
29-29.9	.78	35-35.9	.90
30-30.9	.80	36 and above	.92

NORTH LOUISIANA—ARKANSAS FIELDS

*Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.30
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.50
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60
Smackover, below 24			$1.00
do 24 and above			1.25
Bellevue			1.25
Cotton Valley			1.00
**Urania, La			1.00
†East El Dorado			1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp

Below 28	$1.00	30-30.9	$1.09
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

California Market Little Changed, Natural Gasoline is Weaker

LOS ANGELES, May 21

PETROLEUM markets were without material change during the past week, although there is a large supply of natural gasoline in the hands of refiners and manufacturers, with prices relatively weaker. Gasoline quotations are the same as for the past two weeks. Fuel oils are holding fairly steady, most refiners being able to move their surplus freely at present prices.

A check early this week indicates that of the 185 natural gasoline plants in the state, 29 are shut down and two are being dismantled. In spite of this, the production of natural gasoline during April exceeded production in March. One of the larger refining and producing companies has more natural gasoline than it needs and shut down two plants, pinched in another and turned back to owners two other plants operated on lease. Spot natural gasoline can be purchased in fair amounts at 6 cents, but contracts are holding about 1 cent higher. It is freely predicted that natural gasoline will be scarcer within the next four to six weeks, as the production of gas at Seal Beach is fast declining. The same is true of Huntington Beach, and at Ventura Avenue, it is doubted if the production of natural gasoline will be as great in May as it was in April.

The retail gasoline market is rather nervous as rumors continue to spread that some of the companies are cutting tank wagon prices. Smaller refiners are selling gasoline to Independent service stations at 2 cents under the market, but such conditions have always existed in southern California.

Tank car gasoline prices continue to hold around 7 to 8 cents for U. S. Motor, with kerosenes at 5½ to 6½ cents. The export market seems to be holding its own, with cargoes quoted at 6 to 7 cents for U. S. Motor for movement to east coast. One purchaser attempted to secure a cargo of gasoline this week at 5 cents and could not find a seller. Late in the week 5½ cents was being offered for a cargo and one refiner was willing to sell at that price.

The tanker charter rate is easier, with one boat being offered at 90 cents for trip through Canal to east coast. Several tankers probably could be chartered for the trip at a dollar a barrel, which includes Canal tolls. Clean bottoms are slightly cheaper than dirties, due to scarcity of dirty bottoms.

The bids opened at Washington for furnishing fuel oil to the government were encouraging in that every company except one wanted more than 70 cents a barrel. The Pan American's low bid of 64½ cents was rather startling to the other refiners. The Richfield bid .704 cents, while the Associated wanted .775 cents. The Shell Co. apparently did not want the business as its bid was 95 cents. California Petroleum bid .745 cents. The bids were on a total of 6,323,670 barrels, to supply west coast requirements during the year beginning July 1.

It develops that the recent Shell Co. purchase of fuel oil recently in California was for a total exceeding 2,000,000 bar-

Purchasers, in All Fields (in Effect, May 23, 1927)

GULF COASTAL

Prices of The Texas Co. (Effective March 14)

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co. and Midwest Refining Co.
(Salt Creek prices effective March 12)

‡Salt Creek	29-29.9	$1.14
" "	30-30.9	1.16
" "	31-31.9	1.18
" "	32-32.9	1.20
" "	33-33.9	1.22
" "	34-34.9	1.24
" "	35-35.9	1.26
" "	36-36.9	1.28
" "	37 and above	1.30
Elk Basin		1.33
Grass Creek light		1.33
Big Muddy		$1.25
Lance Creek		1.33
Rock Creek		1.25
Mule Creek		1.30
Rex Lake		1.10
‡Osage		1.33
‡Cat Creek, Mont		1.33
Sunburst, Mont		1.35
‡Hogback, N. Mex		1.38
Artesia, N. Mex		1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Seal Beach Hill Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	.....	$ .85	$ .85	.....	$ .75	.75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	.....	.85	.....	.85	.85	.....	.77	.77	.76	.78	.85	.85
21-21.9	.86	.86	.85	.....	.86	.....	.85	.86	.....	.79	.79	.77	.81	.85	.85
22-22.9	.87	.87	.85	.....	.87	.....	.85	.87	.....	.81	.81	.78	.85	.85	.85
23-23.9	.88	.88	.....	.....	.88	.....	.85	.88	.....	.83	.83	.79	.89	.85	.85
24-24.9	.89	.89	.....	.....	.89	$ .89	.85	.89	$ .85	.85	.85	.80	.93	.85	.85
25-25.9	.90	.90	.....	.....	.90	.90	.86	.90	.85	.87	.87	.81	.97	.86	.86
26-26.9	.92	.92	.....	.....	.92	.92	.87	.91	.85	.89	.89	.83	1.01	.87	.87
27-27.9	.94	.94	.....	.....	.94	.94	.88	.92	.85	.91	.91	.85	1.05	.88	.88
28-28.9	.96	.96	.....	.....	.96	.96	.89	.93	.86	.93	.93	.87	.....	.89	.89
29-29.9	.98	.....	.....	.....	.98	.98	.90	.94	.87	.96	.96	.89	.....	.91	.91
30-30.9	1.00	.....	.....	.....	1.00	1.00	.91	.95	.88	.99	.99	.91	.....	.93	.93
31-31.9	1.03	.....	.....	.....	.....	1.03	.....	.....	.89	1.02	1.02	.93	.....	.....	.95
32-32.9	1.06	.....	.....	.....	.....	1.06	.....	.....	.91	1.05	1.05	.95	.....	.....	.97
33-33.9	.....	.....	.....	.....	.....	1.09	.....	.....	.93	1.08	1.08	.97	.....	.....	.99
34-34.9	.....	.....	.....	.....	.....	1.12	.....	.....	.95	.....	1.11	.99	.....	.....	1.01
35-35.9	.....	.....	.....	.....	.....	1.15	.....	.....	.97	.....	.....	1.01	.....	.....	1.03
36-36.9	.....	.....	.....	.....	.....	1.18	.....	.....	.99	.....	.....	.....	.....	.....	1.06
37-37.9	.....	.....	.....	.....	.....	1.21	.....	.....	1.01	.....	.....	.....	.....	.....	1.09
38-38.9	.....	.....	.....	.....	.....	1.24	.....	.....	1.03	.....	.....	.....	.....	.....	1.12
39-39.9	.....	.....	.....	.....	.....	1.27	.....	.....	1.06	.....	.....	.....	.....	.....	1.15
40-40.9	.....	.....	.....	.....	.....	1.30	.....	.....	1.09	.....	.....	.....	.....	.....	.....
41-41.9	.....	.....	.....	.....	.....	1.33	.....	.....	1.12	.....	.....	.....	.....	.....	.....
42-42.9	.....	.....	.....	.....	.....	1.36	.....	.....	1.15	.....	.....	.....	.....	.....	.....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	May 23	May 16
Soda Ash light 58% bags	cwt. $1.325	$1.325
Silicate of Soda 60 deg. drums	cwt. $1.65	$1.65
Sal Soda wks	$0.90–1.1090	1.10
Caustic Soda 76% solid	cwt. $3.00	3.00
Chloride of Lime works	cwt. $2.00	2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point	per ton $10.50–11.00	10.50–11.00
Liquid Chlorine tank cars works	lb. 4	4

Compounders' Supplies (Open Market)

Vegetable Oils—			
Linseed carloads spot	lb.	11.1	11.2
June		11.1	11.2
Tanks spot		10.3	10.4
*Soya Bean Tanks, Coast	lb.	9.50	9.625
Castor Oil—			
No. 1 Carlots, Bbls		14.00	14.00
No. 3 Carlots, Bbls		13.50	13.50
Animal Oils—			
English Degras		5.375	5.375
Domestic Degras, bbls., carloads	lb.	4.50	4.50
Oleic Acid—			
Dist. Bbls	lb.	9.25	9.50–9.75
Saponified Bbls	lb.	9.50	9.75–10
Lard Oils—			
Prime Winter Strained. 2 to 1½ ffa.	40-45c.t.lb.	14.875	15.00
Extra Winter Strained.. 2 to 4½ ffa. 40-45c.t.lb.		12.75	13.00
Extra..... 4 to 5 ffa. 40-45c.t.lb.		11.875	11.75
Extra No.1.. 7 to 10 ffa. 40-59c.t.lb.		11.375	11.25
No. 1.....15 to 18 ffa. 40-45c.t.lb.		10.50	10.25
No. 2.....22 to 23 ffa. 40-45c.t.lb.		10.00	10.00
Prime Edible Tallow under 1⅞ ffa. 40-45c.t.N.Y.	lb.	8.375	8.375
Tallow acidless	lb.	10.625	10.25
Lard Stearine	lb.	15.00	15.00
Oleo Stearine	lb.	9.625	9.25
Neatsfoot Oil—			
Pure	bbls.-lb.	13.25	12.75
Extra	bbls.-lb	11.375	11.25
No. 1	bbls.-lb.	10.25	10.25
Cold pressed	lb.	17.75	15.75
Fish Oils—			
Menhaden Oil Light pressed	gal.	60	60
White	gal.	66	66
Yellow bleached	gal.	64	64
Whale, extra winter bleached	gal.	82	82
Naval Stores—			
Turpentine, N. Y	gal.	64	63
Turpentine†	gal.	58	54
Rosin, B. N. Y		$ 9.60	$ 9.75
Rosin, F. N. Y	bbl.	$10.45	$10.55
Rosin, B†	bbl.	$ 8.00	$ 8.20
Rosin, F†	bbl.	$ 8.85	$ 8.85
Rosin Oil 1st run	gal.	57	57
Rosin Oil 2nd run	gal.	62	62
Pine Tar—			
Kiln Burnt	bbl.	$16.00	$16.00
Retort	bbl.	$16.00	$16.00
Alcohol—Denatured—			
Formula 5 Bbls	gal.	49.5	49.5
Drums	gal.	42.5	42.5

†Savannah, Ga., market.
*Nominal.

rels and that the business was divided between Pan American, Associated and California Petroleum. The price paid is not known, but such a purchase indicates that the Shell Co. is not in a position to take care of its fuel oil requirements and has had to go into the market. The low bid of the Pan American indicates that the company is anxious to move a part of its fuel oil now in storage.

According to the monthly report of the American Petroleum Institute, San Francisco office, Pacific coast, stocks of fuel oil, including heavy crude, increased 651,127 barrels during April, while stocks of refinable crude decreased 82,582 barrels. Gasoline stocks increased 43,942 bbls.

OIL STOCKS AND FINANCES

National Petroleum News

Pure Operating Income at Peak; Net Profits Slightly Less

CLEVELAND, May 21.

GROSS and net operating incomes of Pure Oil Co. in fiscal year ended March 31, 1927, were largest in company's history, but after taxes, interest and reserves the net profit was $10,892,544 compared with $12,922,302 in the preceding fiscal year when income of $2,812,772 was received from other than operating sources. After dividends on the preferred stock Pure netted $3 a share on the 3,038,370 shares of $25 common stock compared with $3.70 a share the preceding year. The net to common was the fourth best in the company's history, having been exceeded by 10 to 70 cents a share in each of the three preceding years.

Figures of the year ended March 31, 1926, reflected the earnings of some rather favorable months, while those of the year ended March 31, 1927, include a recent period of low prices.

The balance sheet of March 31 shows a gain in property of approximately $13,000,000 during the fiscal year. Current assets were $28,570,788 and current liabilities $13,658,701, leaving net working capital of $14,712,087, compared with $20,286,638 March 31, 1926. Crude oil inventory was reduced $3,700,000 and refined finished oil inventory was increased $1,320,000.

The company has done no financing but has used earnings and some of its existing liquid assets for extraordinary capital expenditures made necessary by the discovery of the Seminole field, it said. This has included extensive outlays for drilling of wells, erection of lifting pants, construction of crude oil storage and pipe line extensions.

Out of $18,976,269 available for reserves and dividends, $11,000,000 went to reserves and surplus, while slightly less than $8,000,000 went to dividends. The balance sheet now shows more than $108,000,000 of accumulated reserves and surplus—a sum that represents nearly 55 per cent of the whole figure at which the company's property, plant and equipment are valued.

"The refineries have been going through a rebuilding program in the last 18 months, which is now completed," the company said in a statement to the press. "The percentage of gasoline which Pure Oil obtains per barrel of crude is materially higher than the average for American refineries. All of its refineries are now highly efficient, and their fractionating equipment, largely of this company's own design, is peculiarly successful, and contributed to the high recovery of gasoline.

"The marketing division has been converted, during the last year, into a more profitable end, as the result of careful studies of marketing problems. The officers are confident that the profits from this source will steadily increase. The oil business has not provided many conspicuous examples, in recent years, of marketing organizations that yield a satisfactory profit, and one rather conspicuous trend has been for marketing organizations and refineries to effect consolidations with crude oil producers, in order that the losses from refining and marketing might be offset by gains from crude production. Pure Oil has found its solution for the marketing problem through a close study of the requirements of automotive engines. Its refineries have produced a superior gasoline, known as Dentonox, that is not only adapted for use in the high compression engines of today, but will also give satisfactory performance in the still higher type that is near at hand."

In spite of the over-production and low prices of oil, Henry M. Dawes, president of Pure Oil, said in his statement to stockholders he believed the outlook for the company during the coming year was satisfactory.

"The company," he explained, "feels particularly sanguine as to its potential producing properties, the development of which will to a large extent be determined by market conditions. Competitive drilling and almost an entire lack of co-operation amongst the large as well as the smaller companies have produced a condition of overproduction which has resulted in low prices for both crude and refined products. How long this cycle will last cannot be predicted but it is the belief of the officials of the Pure Oil Co. that its affairs are in such shape that it can go through such a period without materially interfering with its ultimate progress."

Mr. Dawes said that with the exception of the refining division all departments showed an increase in both gross and net income last year.

Pure Oil and Subsidiaries' Income Accounts

	1927	1926
Gross earnings	$141,298,985	$118,715,184
Costs, oper. exp	119,293,065	96,726,230
Net oper. income	$ 22,015,920	$ 21,988,954
Other income	.....	2,812,772
Total income	$ 22,015,920	$ 24,801,726
Taxes, interest	3,039,651	3,536,587
Deprec., deplet	8,083,725	8,342,837
Net profit	$ 10,892,544	$ 12,922,302
Preferred divs	1,776,264	1,670,503
Common divs	6,076,740	4,937,516
Surplus	$ 3,039,540	$ 6,314,283
Surplus adj. add	539,986	58,077

Pure Oil Co. Consolidated Balance Sheets, March 31

ASSETS

	1927	1926
Plant, equip	$197,272,808	$184,374,270
Other invest	3,901,849	4,049,261
Stock in treasury	316,000	316,060
Cash	3,618,412	3,140,021
Marketable secur	.....	250,000
Accts. receiv	5,771,049	5,116,977
Notes, accept	1,178,031	738,824
Finished oil	7,035,214	5,716,077
Crude oil	6,293,736	10,014,127
Materials, supplies	4,674,348	3,871,669
Deferred charges	2,014,692	1,333,089
Total	$232,076,139	$218,920,315

LIABILITIES

Common stock	$ 75,959,250	$ 75,959,250
Preferred stock	23,000,000	23,000,000
Subs. preferred	1,799,200	800,000
Funded debt	9,931,500	10,430,000
Accts. payable	3,803,102	2,724,629
Notes payable	7,936,000	4,350,000
Accrued taxes, int	1,919,599	1,252,605
Deprec. deplet. res	45,474,291	40,403,351
Other reserves	157,743	265,758
Surplus	62,000,454	59,500,899
Total	$232,076,139	$218,920,375

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by oppo tunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

25538.—**Petroleum** (unspecified) Oporto, Portugal, purchase and agency.

25559.—**Paraffin,** Alexandria, Egypt, agency.

25560.—**Gasoline and kerosene,** Guadeloupe, West Indies, agency.

25561.—**Light and medium lubricating oils,** Saloniki, Greece, agency.

25562.—**Lubricating oils,** Mannheim, Germany, agency.

25563.—**Lubricating oils,** Venlo, Netherlands, agency.

25564.—**Paraffin,** Hamburg, Germany, agency.

25565.—**Mineral oils,** Prague, Czechoslovakia, agency.

25401.—**Gasoline,** Manaos, Brazil, agency.

Transactions In Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 21 Sales	First	High	Low	Last	Ch'ge
32¾	24¼	37⅝	27⅝	(sh)	814,800	N.P.	Amerada Corp.	50cQ	Jan. 31, 27	6,100	29¾	29⅞	29	29½	— ½
74	39⅜	60½	55⅛	(sh)	200,000	N.P.	American Republics	.....	.....	.....	.....	.....	.....	.....	.....
59½	44¾	50¾	45	$	56,000,000	$ 25	Associated Oil	50cQ	Mar. 25, 27	100	45	45	45	45	— ¼
128¾	97	117⅜	107		50,000,000	100	Atlantic Refining	.....	June 16, 24	3,900	110½	111½	108½	110½	+ ⅝
120	115½	118	115¾		20,000,000	100	do pfd	$1¾Q	May 2, 27	.....	.....	.....	.....	.....	.....
58½	25½	35½	25⅛		25,000,000	25	Barnsdall Corp. A	62½cQ	Apr. 5, 27	16,300	25⅞	25⅞	23⅞	24¼	— 1¼
29½	22½	32½	22		3,715,775	25	do B	62½cQ	Apr. 5, 27	900	24¾	24¾	23½	23½	— 1⅛
48¾	29¾	32⅞	21½		47,709,175	25	California Petroleum	50cQ	Mar. 1, 27	5,000	25¼	25½	24⅜	24⅝	— ⅝
94¾	50	96¾	72½		25,721,200	100	General Asphalt	.....	.....	12,900	76⅞	76⅞	73	75¼	— 1¾
140½	94⅞	144⅞	113		7,294,000	100	do pfd	$1¾Q	Mar. 1, 27	.....	.....	.....	.....	.....	.....
72	50⅛	133	60⅛		25,000,000	100	Houston Oil	.....	.....	46,500	134⅜	142¼	129	138	+ 5
84	19⅝	32¾	17⅝	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Apr. 18, 27	13,800	19⅝	19⅞	†17⅝	18½	— 1½
18¾	7¾	11⅞	7¾	$	8,283,960	$ 10	Indian Refining	.....	Dec. 15, 20	200	8⅝	8⅝	8	8	— 1
12½	8	10⅞	7⅜		4,546,490	10	do ctfs	.....	.....	800	7¾	7¾	7½	7½	— ⅛
104	90	112	102		2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
¾	¾	.....	.....		1,644,760	10	Kansas & Gulf	.....	.....	.....	.....	.....	.....	.....	.....
24½	19⅛	32½	20½	(sh)	3,983,629	N.P.	Lago Oil & Transport	75cQ	May 1, 27	4,200	28¼	28⅞	26¾	27½	— 1⅛
19¾	12	18⅜	12½	(sh)	1,134,238	N.P.	Louisiana Oil Refining	.....	.....	3,600	12⅝	12¾	12½	12½	— ¾
98	93	97	90	$	4,000,000	$100	do pfd	$1¾Q	May 16, 27	100	92	92	92	92	+ ½
28¾	16½	22¾	13½	(sh)	330,000	N.P.	Maracaibo Oi	.....	.....	1,000	14	14	13½	13½	— ½
63¾	40¼	58½	36	(sh)	1,928,408	N.P.	Marland Oil Co	$1Q	Dec. 31, 26	64,600	38½	38½	36½	38⅛	— ⅝
.....	.....	.....	.....	$	45,942,800	$100	Mexican Petroleum	$5Q	Apr. 20, 27	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....		12,000,000	100	do pfd	$2Q	Apr. 20, 27	.....	.....	.....	.....	.....	.....
18¾	6	9¾	5	(sh)	945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	8,700	6⅛	6⅛	† 5	5¾	— ⅛
57	27½	39¾	29	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	75cQ	May 1 27	7,400	31½	31⅝	30⅝	31⅛	+ ⅛
104¼	90	105	97	$	6,718,000	$100	do pfd	$1¾Q	Mar. 1, 27	100	100	100	100	100	0
2½	¾	3¼	1⅝		25,415,540	10	Middle States	.....	July 1, 23	8,000	2¾	2¾	2½	2¾	0
1¾	½	2¾	1¼		4,384,680	...	do ctfs	.....	.....	1,600	1¾	1⅞	1¾	1⅞	0
2¼	1	1⅞	1⅛	(sh)	3,500,000	N.P.	Pacific Oil	.....	Jan. 20, 26	2,500	1⅛	1¼	1⅛	1⅛	0
76½	56½	65⅞	56⅛	$	48,307,400	$ 50	Pan American P. & T.	$1.50Q	Apr. 20, 27	900	59	59	57½	57⅝	— ⅜
78¾	56⅞	66¾	56⅛		100,546,350	50	do B	$1.50Q	Apr. 20, 27	22,900	60⅛	60⅜	58⅛	58⅜	— 2⅛
46	30	37⅞	19	(sh)	400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	4,600	23	23	20	20	— 3
12	4½	18⅞	8	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	1,500	10⅝	10¾	9⅝	10	— 1¼
99⅜	51	81¾	68⅝	$	2,935,200	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
57⅜	40	60¾	39¾	(sh)	2,406,796	N.P.	Phillips Petroleum	75cQ	Apr. 1, 27	92,100	43¾	43⅞	42⅜	43⅜	— ⅝
1⅜	½	¾	½	$	29,622,925	$ 25	Pierce Oil Corp	.....	.....	2,400	⅝	¾	⅝	⅝	0
27⅛	11¾	20	13½		15,000,000	100	do pfd	.....	Feb. 1, 22	600	18⅛	*20	18⅛	20	+ 1
7	2¼	3⅜	2½	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	4,400	3¼	3½	3⅜	3½	+ ¼
20¾	11	33⅞	16¾	$	11,467,850	$ 50	Producers & Refiners	.....	Sept. 15, 23	118,800	33	*33⅞	29½	30¼	— 2¾
61¾	30¾	50	36⅞		2,845,350	50	do pfd	.....	May 1, 25	3,060	45½	48¼	44¼	44¾	— 1¼
51	25¼	33⅝	26		75,959,250	25	Pure Oil Co	37½cQ	Mar. 1, 27	11,800	27⅞	27⅞	26¾	26⅞	— ¾
112¾	106	113	111¾		13,000,000	100	do 8% pfd	$2Q	Apr. 1, 27	100	113	113	113	113	+ ¾
57¾	47¾	58	48½	(sh)	646,502	13.40	Royal Dutch, N. Y. shares	$1.83⅓	Jan. 28, 27	1,100	49¾	50¼	49⅛	50¼	+ ⅝
40¾	40½	47⅞	43⅝	(sh)	86,962	£2	Shell Transport & T	96.7c	Jan. 17, 27	900	46	46⅛	46	46⅛	— ⅛
51	24	31¾	25	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 27	11,700	28⅜	28½	27½	28	— ½
114	103	111	107½	$	18,350,400	$100	do pfd	$1⅓Q	May 16, 27	.....	.....	.....	.....	.....	.....
28¾	15⅛	22¾	15¾		7,208,080	10	Simms Petroleum	37½cQ	Apr. 1, 27	9,500	16	16¼	†15¾	15⅞	— ⅛
24⅞	16¾	22⅜	16½	(sh)	4,500,782	N.P.	Sinclair Consolidated	.....	May 31, 24	30,700	17⅞	17⅞	16⅞	17½	— ⅜
99½	90	103¼	97	$	17,210,000	$100	do pfd	$2Q	May 16, 27	300	99½	99⅝	99	99	0
37⅛	26⅝	37⅜	25		27,396,590	25	Skelly Oil Co	50cQ	Mar. 15, 27	12,200	26½	26½	25¾	26¼	— ¼
63¾	52¾	60¾	50¾	(sh)	13,016,484	N.P.	S. O. California	62½cQ	Mar. 15, 27	12,500	54⅜	54⅜	53⅜	53½	— ⅞
46¾	37⅜	41¾	35⅝	$	517,397,550	$ 25	S. O. New Jersey	25cQ	Mar. 15, 27	20,000	37¼	37¼	36½	36⅞	— ⅜
120⅜	115	116¼	114¾		206,958,970	100	do pfd	$1¾Q	Mar. 15, 27	.....	.....	.....	.....	.....	.....
83¼	52½	84⅛	80½		419,023,275	25	S. O. New York	40cQ	Mar. 15, 27	17,200	30⅝	30¾	30⅜	30⅛	— ⅝
41⅝	30⅛	34⅞	30	(sh)	1,105,384	N.P.	Sun Oil	25cQ	Mar. 15, 27	2,200	31	32	31	31½	0
5¼	1	6⅛	3¾	(sh)	1,121,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	8,000	4¼	4½	4¼	4½	+ ⅛
58	48	58	51	$	16,328,725	$ 25	The Texas Co	75cQ	Dec. 30, 26	.....	.....	.....	.....	.....	.....
57⅞	53⅛	58	45		141,467,575	25	The Texas Corp	75cQ	Apr. 1, 27	18,500	47¼	47⅛	46⅝	47¼	0
19½	12	16¾	12		8,380,340	10	Texas Pacific Coal & Oil	15cQ	Mar. 31, 27	5,600	12⅞	12⅝	12⅛	12½	0
89¾	87	89¾	88	(sh)	2,157,991	N.P.	Tide Water Oil Co	87½cQ	Mar. 31, 27	.....	.....	.....	.....	.....	.....
103	87¼	89¾	87	$	20,705,100	$100	do 5% pfd	$1.25Q	May 16, 27	300	88	88	88	88	0
.....	.....	17½	16		.....	N.P.	Tide Water Associated	30cQ	.....	4,300	17	17¼	16	16¼	.....
.....	.....	90½	90	$	76,347,100	$100	do pfd	$1.50Q	.....	400	90¼	90¼	90	90½	.....
5½	3	5	3¾	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	282,600	4	6⅛	4	6	+ 2
58¾	37¼	56½	39¾	$	40,690,650	$ 25	Union Oil of California	50cQ	May 10, 27	7,800	43½	43½	41¾	41⅞	— 1¾
120¾	84½	112¾	94		30,734,000	100	Union Tank Car Co	$1¼Q	Mar. 1, 27	400	105	106½	105	106½	+ 1¾
29¾	25⅛	27½	22	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 27	1,000	24	24½	23¾	24	— ½

*New High †New Low xEx-Dividend Total Sales 918,660

Cleveland Stock Market

May 20

	Par Value	Bid	Asked	Last Sale
Canfield Oil Co	100	.....	.....	110
do pfd	100	.....	.....	100
Fred G. Clark Co	10	3¼	4	3¼
National Refining Co	25	37	37¼	36¾
do pfd	100	130	133	132½
Paragon Refining Co	25	6⅜	7	6¾
do pfd	100	66	70	66½

xEx dividend

Oil Dividends

	Amt.	Payable	Stock of Record
Atlantic Refg. q	$1	June 15	May 21
Continental Oil q	25c	June 5	May 14
Cumberland P. L. q	$2	June 15	May 31
Imperial Oil q	25c	June 1	May 14
Royal Dutch	13½%	.....	.....
Shell Transport	15%	July 6	.....
S. O. Ohio q	$2.50	July 1	May 27
S. O. New York q	40c	June 15	May 27
Sun Oil q	25c	June 15	May 25
Union Tank Car q	$1.25	June 1	May 16

Moves Office to Tulsa

TULSA, May 23.—The Sands Petroleum Co. has moved its offices from Okmulgee to Tulsa. The new location here is on the sixth floor of the World Bldg. J. W. Harvey, general manager, is in charge of the new offices.

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 20 Sales	First	High	Low	Last	Ch'ge
8½	6¾	.....	.....	N.P.	Andes Petroleum	.....	.....	.....	.....	.....	.....
8½	5¾	8¼	6⅞	$ 10	Arkansas Nat. Gas	2,655	7	7	7	7	0
90½	79¾	96½	84	100	Columbia Gas	32	92¾	93⅜	92¾	93⅜	— ⅛
101¾	93	107	100	100	do pfd	20	107	*107	107	107	+1¾
17	12½	15	9½	10	Devonian Oil	.....	.....	.....	.....	.....	.....
116½	112	116¾	115	100	Duquesne Lt. 7% pfd.	100	115½	115½	115	115	—1⅝
10	5⅛	12¾	6	N.P.	Houston Gulf Gas	595	11½	11½	11	11¼	— ½
46	39	46½	37¼	$ 25	Lone Star Gas	12,958	43	43	41⅜	42	—1¼
47⅜	35⅛	22¾	22¼	25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
47½	42	21¾	21	....	do ctfs	.....	.....	.....	.....	.....	.....
6¾	5	6	5	....	Ohio Oil & Gas	50	5	5	†5	5	0
34	21	21	21	25	Oklahoma Nat. Gas	.....	.....	.....	.....	.....	.....
21	19¼	23	20¼	....	do ctfs	4,152	22⅞	23	22⅛	23	+ ¾
5¾	5⅓	5¾	5¼	5	Pittsburgh Oil & Gas	263	5¼	5½	5¼	5½	+ ¼
10	7½	8	6¾	10	Salt Creek Cons	290	6½	6½	6¼	6¼	0
27	8	26½	17	10	Tidal Osage	25	20¼	20¼	20¼	20¼	—1¾
45	40	43	41	N.P.	Waverly Oil Wks. "A"	150	41¾	42	41¾	42	+ ¼

*New high †New low

PITTSBURGH CURB MARKET

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 20 Sales	First	High	Low	Last	Ch'ge
5¾	2¾	3½	2¾	$ 5	Colombia Synd	.....	.....	.....	.....	.....	.....
.20	.06	.18	.18	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
22	22	.....	.....	10	Forest Oil	.....	.....	.....	.....	.....	.....
91½	85	94	88	25	Gulf Oil Corp	.....	.....	.....	.....	.....	.....
79	79	105	93	100	Houston Gulf Gas pfd	66	103½	*105	103½	105	+ ¾
12	7½	10¾	6¼	N.P.	Leonard Oil & Dev	1,200	7	7	6¼	6¼	—1½
1⅝	1⅝	.....	.....	N.P.	Mountain & Gulf	.....	.....	.....	.....	.....	.....
30¼	29	32	31¼	$ 25	Oklahoma Gas	.....	.....	.....	.....	.....	.....
.....	.....	1.20	1.00	....	Oklahoma Eastern	.....	.....	.....	.....	.....	.....
2	.15	2.70	1.10	10	Omar Oil & Gas	1,800	1.50	1.60	1.45	1.50	—.10
.....	.....	2¼	1¾	....	Pittsburgh Oil Dev	.....	.....	.....	.....	.....	.....
2	1¼	2¼	2¼	5	Do Pfd	.....	.....	.....	.....	.....	.....
33½	20	31	24	10	Plymouth Oil	725	25	25	25	25	— ⅛
7	3	6	5½	5	States Oil	.....	.....	.....	.....	.....	.....
3½	2	3‡	2¼	1	Texon Oil & Land	5,930	2½	2⅝	†2¼	2⅝	+ ⅛
25¾	8	23¾	18	10	TidalOsage(non-vtg)	100	19½	19½	19½	19½	+1½

†New High Record xEx-Dividend ‡Ex-Rights

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 20 Sales	First	High	Low	Last	Ch'ge
21	16¾	21⅝	18½	£ 4,000,000	£ 1	Anglo-American Oil	60¾cS.A.	May 27, 26	400	19⅜	19⅜	18⅛	18⅞	— ⅛
20⅝	16½	20½	17¾	.....	£ 1	do ctfs. non-voting	.....	.....	100	18⅛	18⅛	18⅛	18⅛	— ⅝
19	16	20½	18¾	.....	£ 1	do voting ctfs	.....	.....	.....	.....	.....	.....	.....	.....
2¾	.75	1¼	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	.....	100	†75	75	—25
5	2¾	4¼	2¾	$ 10,000,000	$ 10	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
75	65	69	50	1,000,000	25	Borne Scrymser	$1S.A.	Apr. 15, 27	50	51½	51½	51½	51½	+ ½
59½	42	54½	45	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 27	600	53½	54	53	53	— ½
82½	65	95	76½	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 31, 27	600	94	94	92	92	— 2
25⅞	17½	22⅝	17½	35,051,920	10	Continental Oil	30cQ	Mar. 15, 27	5,000	17¾	18	17½	17½	+ ½
17	13½	.....	.....	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 27	120	93	94	93	93½	+ ½
65¾	43	55	47	5,000,000	100	Eureka Pipe Line	$1Q	May 2, 27	50	50	50	50	50	— 2
82½	9⅛	13½	8½	2,000,000	100	Galena Signal Oil	.....	June 30, 25	200	8¾	8¾	† 8½	8½	— ¼
94½	35	59¾	36	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
97½	40	60⅛	48¾	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
99⅝	52	62¾	54	72,916,666	25	Humble Oil & Refining	30cQ	Apr. 1, 27	4,900	57⅛	57⅝	55¼	56	— ¾
144½	125¾	150	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 26	550	140	142	139½	139½	— ½
39¾	32½	47	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	25cQ	Mar. 1, 27	900	44⅜	44½	44	44¼	— ⅛
70	54¾	69½	61	$ 5,000,000	$ 50	Indiana Pipe Line	$1Q	Feb. 15, 27	500	68	69½	68	69½	+ ¾
55¼	28¾	54⅜	28½	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 15, 26	10,600	30	30	†28½	29	— 1⅛
20¾	12½	17	13½	$ 6,362,500	$12½	National Transit Co	25cQ	Mar. 15, 27	2,400	16¾	*17	16¾	16⅞	0
51½	27⅜	36	31¼	5,000,000	100	New York Transit	.....	July 15, 26	100	32½	33	32½	33	+ ½
80½	64	85	70	4,000,000	100	Northern Pipe Line	$3S.A.	Jan. 1, 27	350	80½	*85	80½	85	+ 6
67¾	55¾	64¼	52	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 27	1,700	56	56	55⅛	55¾	0
24¾	15	19	12	10,000,000	25	Penn Mex Fuel	.....	May 21, 25	800	16¼	17½	16¼	17½	+ 1⅜
60¾	48	55½	45⅝	60,000,000	25	Prairie Oil & Gas	50cQ	May 31, 27	8,400	47¾	47⅞	46⅝	46¾	— 1¼
137½	122¾	165⅝	132	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 27	2,200	163½	165	163½	164	+ 1
220	184½	201½	180	4,000,000	100	Solar Refining	$3S.A.	Dec. 20, 26	.....	.....	.....	.....	.....	.....
27	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	260	17½	18	17½	18	... 1
50	34½	41¾	34½	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 27	600	35½	35½	35	35¼	— ¼
57	49	70	55½	3,500,000	100	South West Pa. Pipe Lines	$1Q	Apr. 1, 27	150	69¼	*70	69¼	70	+ 2
70½	60⅜	74¼	64¾	226,322,708	25	S. O. Indiana	62½cQ	Mar. 15, 27	14,200	67	67¼	66	66⅝	— ⅝
86½	16⅜	20⅞	15⅝	8,000,000	25	S. O. Kansas	.....	June 16, 24	900	17⅛	17¼	16⅛	16⅜	— ⅝
134¾	108	122¾	112	16,929,809	25	S. O. Kentucky	$1Q	Mar. 31, 27	700	114	114¼	113¼	114¼	— ¾
51⅜	42	49½	45½	4,518,600	25	S. O. Nebraska	63cQ	Mar. 21, 27	400	46¼	46¼	46	46	— ¼
672	288	86	73	14,000,000	25	S. O. Ohio	$2½Q	Apr. 1, 27	950	79¾	81	77	77	— 1¼
120½	116½	122	117¼	7,000,000	100	do pfd	$1¾Q	Mar. 1, 27	100	118½	118½	118	118	— 1
23	15½	17⅝	14½	861,466	25	Swan Finch Co	.....	Nov. 1, 19	150	15½	15½	15¼	15¼	— ¼
109¾	90¼	116½	95⅛	62,199,950	25	Vacuum Oil	50cQ	Mar. 19, 27	2,400	111⅞	112	110¾	111¼	— ⅛

NEW YORK CURB BONDS

Week Ending May 20

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	100½	99½	99½	— ⅜
Cities Serv. 5s '56	91¾	91¾	91¾	0
Cities Serv. 6s '66	101⅛	101	101	0
Empire Oil 5½s wi	96	96	96	0
Galena S. O. 7s '30	90½	90¼	90½	— ¼
General Pet. 6s '28	101	100⅞	100⅞	— ⅛
Gulf Oil 5s '37	99⅞	99½	99¾	— ⅛
Gulf Oil Penn 5s '47	99⅞	99⅜	99⅜	— ½
Indepen. Oil 6s '39	99	99	99	0
Pure Oil 6½s '33	103¾	103¼	103¾	+ ⅛
Richfield Oil 6s wi '41	94	94	94	—1⅛
Shell Un. Oil 5s	99½	99⅜	99½	0
Skelly Oil 5½s '39	97	97	97	0
S. O. N. Y. 6½s '33	104⅞	104½	104⅝	— ⅛
Sun Oil 5½s '39	100¾	100⅛	100½	+ ½
Trans. Cont. Oil 7s '30	99½	97⅞	99¼	+1⅜
United Oil Prod. 8s '31	75⅝	75⅝	75⅜	0
Valvoline 7s '37	106	105	105	—1

NEW YORK BONDS

Week Ending May 20

	High	Low	Last	Ch'ge
Amer Rep. Deb. 6s	99½	99¼	99½	0
Assoc. Oil gold 6s	102¾	102⅜	102⅜	— ⅛
Atlantic Refg. deb. 5s	101½	100¾	100¾	— ⅜
Barnsdall Corp. 6s	99	98	98⅛	— ¾
Barnsdall Corp. 6s ex war.	91½	90½	90½	+3¾
Cal. Petrol 5s	94¾	94¼	94¼	0
Cal. Petrol 5½s	99	98½	98½	— ½
Empire Gas & Fuel 7½s	110	109⅜	109⅝	— ⅜
Empire Gas & Fuel 6½s	105⅝	105	105	— ⅝
Gen. Asphalt 6s	107⅝	107⅝	107⅝	0
Gen. Petroleum 5s	101½	101¼	101¼	— ⅛
Humble Oil & Refg. 5½s	102¼	101⅞	102	0
Humble Oil 5s wi	98¾	98½	98⅝	— ⅛
Mid-Cont. Pet. 6½s	104	103½	104	0
Pan-Amer. P & T 7s	105¼	105⅛	105¼	0
Pan-Amer. P & T 6s	104	103	103⅛	— ⅞
Pan-Amer. P & T 6s	94¾	93¼	93¼	—1¼
Pierce Oil deb 8s	101	101	101	0
Prod. & Refnrs. 8s	111	111	111	+ ⅛
Simms Pet. cvt 6s	100	99¼	99¼	— ¾
Sinclair Con. Oil Col. 7s	100⅛	99¾	100	— ⅛
Sinclair Con. Oil Con. 6½s	96⅞	95⅞	95⅞	— ⅞
Sinclair Con. Oil 6s	99¾	99¾	99¾	— ⅛
Sinclair Crude Oil 6s	100⅛	99⅞	100	0
Sinclair Pipe Line sf 5s	92½	92	92⅜	— ⅛
Standard Oil N. Y. 4½s	95¼	94¾	95	— ⅛
Standard Oil N. J. deb. 5s	102¼	102	102	— ⅛
Union Oil of Cal. 6s-A	107¾	107¾	107¾	0
Union Oil of Cal. 5s-C	99¼	98⅞	98⅞	— ⅜

CHICAGO, May 20.—E. J. Freeman, who resigned recently from Security Petroleum Co. at Chicago, has accepted a position as sales manager of the Northland Oil Co. with offices at 624 S. Michigan avenue.

New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended May 20 Sales	First	High	Low	Last	Ch'ge
6¾	45	2 1/16	.76	$5	Amer. Con. Oilfields	10,300	85	88	80	85	— 2
14½	4	7½	4	N.P.	Amer. Maracaibo	6,600	4¾	4⅞	4¼	4¼	— ⅝
8¾	5¾	8¼	6¾	$10	Arkansas Nat. Gas.	100	7	7	7	7	0
20¾	14¼	20½	15½	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
85¾	60	27	20½	N.P.	British American	.....	.....	.....	.....	.....	.....
28¾	9¼	28¼	15½	25c	Carib Syndicate	3,700	16¼	16¾	15½	15½	— ¾
.....	.....	26	16½	.....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	29,500	46⅞	46⅞	44⅞	45¾	— ⅛
92½	82¾	92¾	87	100	do pfd	3,700	91¼	91¼	90¾	90⅞	— ⅜
8¾	7¾	8½	7¾	10	do pref. B	100	8¼	8¼	8¼	8¼	0
25¼	10	29¼	23½	10	do bankers' shares	.....	.....	.....	.....	.....	.....
3½	1¾	5 1/16	1¾	$1	Colombia Syndicate	18,000	2 1/16	2 1/16	1⅞	2 1/16	0
10⅛	8¼	9½	8¼	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
16	10	14¾	10½	N.P.	Creole Syndicate	23,000	11¾	11¾	10½	10½	— ¾
7¾	1⅜	8	1¾	N.P.	Crown Central	400	1¼	1¼	1¼	1¼	— ⅛
8½	½	12	4¾	....	Darby Petroleum	.....	.....	.....	.....	.....	.....
.....	.....	11⅜	8	....	do trust ctfs	.....	.....	.....	.....	.....	.....
4	1¾	2½	1¾	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	15	16¾	10	N.P.	do pfd	100	11	11	11	11	— ⅛
7½	2¼	3¾	1⅝	N.P.	Gibson Oil	2,200	1⅝	1¾	1⅝	1¾	+ ⅛
2	.65	1¾	40	N.P.	Gilliland ctfs	100	51	51	51	51	+ 1
98	82	96½	86¾	$25	Gulf Oil Corp	1,100	89¼	90¼	89⅛	90	0
3¾	1	2¾	1¾	N.P.	Kirby Petroleum	1,100	1¼	1½	1⅜	1½	0
12¾	5¾	10⅞	6	N.P.	Leonard Oil & Dev.	5,400	7⅛	7⅜	† 6	6½	— ¾
27	20	27½	22	N.P.	Lion Oil & Refg	100	24	24	24	24	— ¼
46	31	46¾	37	$25	Lone Star Gas	1,800	42½	42½	41½	42¼	— 1¼
2¾	2	2¾	1¾	1	Magdalena Synd	2,100	1½	1½	1½	1½	+ ⅛
5½	1¾	5	1½	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¾	1½	1¾	1	Mountain & Gulf	500	1¾	1¾	1¾	1¾	0
26	23	26¾	22¾	10	Mountain Producers	6,700	24⅛	24¼	24	24¼	0
6¾	5	5⅞	4⅞	5	New Bradford	800	5⅛	5⅛	5	5	0
11¾	2	6¾	4	10	New England Fuel	200	4½	4¼	4½	4¼	+ ⅛
17	9⅛	13¾	9¾	1	New Mex. & Ariz	1,800	9¾	11	9½	11	+ 1⅝
17	8	11	9	$5	New York Oil	2,800	.....	12	10¾	11½	+ 1½
12⅜	8¾	12¾	11⅜	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
44¾	38	.....	.....	$25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
38	28½	27½	21¾	....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
10⅛	5⅞	9⅜	5½	N.P.	Pandem	6,400	6⅝	6¾	5¾	6⅜	0
12⅜	11¾	12⅝	9⅞	N.P.	Pantepec Oil	5,900	10½	10⅝	† 9⅞	10½	— ⅜
2¾	.20	.37	.26	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
22¾	12	13½	8½	$10	Pennok Oil	1,800	9¼	9¼	† 8½	8½	— 1
38	14⅜	24¾	16	$5	Red Bank Oil	100	16	16	†16	16	— 2
30⅛	12	15½	5⅝	N.P.	Reiter-Foster	1,300	6¼	6¼	5¾	5⅞	— ⅞
27½	22	27½	15	$25	Richfield Oil	300	18	18	18	18	— 2
7½	4½	7	4½	N.P.	Ryan Consolidated	100	4½	4½	4½	4½	0
10	7½	8	6	$10	Salt Creek Cons	700	6¼	6⅜	6¼	6¼	— ⅛
36	26¾	32	27¼	10	Salt Creek Prod	5,100	28½	28⅝	28⅛	28¼	— ⅛
4¼	1½	7	3	5	Savoy Oil	.....	.....	.....	.....	.....	.....
27	7⅝	26½	17	10	Tidal Osage	370	20½	21	19	19	— 1¼
25¾	7⅝	23¾	15	10	do non-voting	7,100	19½	20½	17½	17½	— 2
27	20¾	23½	15¼	N.P.	Tide Water Assoc	.....	.....	.....	.....	.....	.....
90½	93¾	95¾	89	100	do pfd	.....	.....	.....	.....	.....	.....
.....	.....	80	63½	100	Transcont. pfd	1,525	69¼	80	69¼	77½	+ 8½
7	4⅛	7⅜	4⅝	5	Venezuelan Petro	1,900	4¾	5	† 4⅝	4⅝	— ⅛
30⅛	23¾	27¾	23½	N.P.	Warner-Quinlan	.....	.....	.....	.....	.....	.....
31¼	22	32¾	20¾	N.P.	Wilcox Oil & Gas	1,200	24	24½	21⅞	24	— 1¼
9½	4¾	8	5¼	$1	Woodley Petroleum	600	5⅝	5⅝	5½	5½	— ⅛

*New High †New Low ‡Ex-Dividend

Gasoline Sales Larger in Pennsylvania

CLEVELAND, May 23.—Better demand for gasoline was reported today by western Pennsylvania refiners following a warm sunshiny week-end. Refiners are more optimistic although prices have shown no large degree of stiffening. One large refiner who a week ago advanced his price of 58-60 U. S. Motor gasoline to 9.50 cents reduced the asking price to 9 cents Friday, and was quoting the latter price today. Today's spot sales were mostly at 8.75 and 9 cents, canvass of the field indicated with one refiner reporting sales up to 9.25 cents.

Slightly increased buying of cylinder stocks also was reported. Considerable bright stocks are sold ahead and the market is reported as stronger than it was two or three weeks ago although some refiners' price ideas, are not so high as a week ago. Neutrals continue scarce and strong. Wax is dull.

Several refiners have lowered their quotations to move kerosene but others are holding to the same prices as a week ago. Fuel oil movement is described as slow.

N. P. A. Technical Men To Visit Capital

WASHINGTON, May 23.—The technical men of the members of the National Petroleum Association will make their annual visit to the Bureau of Standards on Friday, June 17. They made a visit last year, hence it is believed meet to call their second visit an annual one.

A preliminary announcement of the plan has been sent out by A. W. Scott, trustee in charge of the association's department of standards and tests, through the office of Fayette B. Dow, general counsel of the association in Washington.

Mr. Scott, in his preliminary notice speaks of last year's visit as very successful and a valuable experience for the association's technical men. This year the visit will be divided into two programs: First, observation and discussion of routine tests following the general lines of last year's visit: Second, tests of a research character.

Mr. Scott, in his announcement said the technical men were better prepared than they were a year ago to derive benefits from this annual observation of tests and conferences at the bureau of standards.

Dues Based on Gallonage

INDIANAPOLIS, IND., May 21.—Membership dues in the Indiana Petroleum Marketers' Association are based on the gallonage of gasoline sold by each member as revealed in the state gasoline tax. The rate is $100 per million gallons sold a year with a $50 minimum fee and $500 maximum. Sam Hurd is secretary of the association.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

GRADUATE CHEMIST, 30, with four years' experience and one year service in marine lubricant sales, wants position preferably with prospects of going abroad. Writes and speaks Spanish, French and Italian. Box 870.

ENERGETIC OIL MAN of good habits. Experience in gasoline, motor oil and smoke stack sales, agent special representative. District superintendent and sales manager. Now employed. Good reason for changing. Box 871.

DIVISION MANAGER—Young man, 31, married, desires to connect with progressive distributing organization. Will assume full responsibility of success of large or medium chain of service and bulk stations. Have had thorough and practical experience in accounting, credits, collections, office management and business building advertising. Salary to start $3600. Will go anywhere. Box 874.

SALESMAN with entire Pacific Coast retail and jobbing experience, desires connection. Has technical training, thorough experience and good refernces. Box 872.

GREASE-MAKER and chemist with ten years' experience, desires connection. Can manufacture any greases, soaps or specialties. References supplied. Box 873.

Business Opportunities

PETROLEUM PRODUCTS BOUGHT ON COMMISSION

Make this office your Tulsa buying office on a commission basis.

Let's Exchange References

DALE W. MOORE

532-533 Mayo Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178
L. D. 136

Miscellaneous

WHAT IT COSTS

For "Position Wanted" advertisements without border—5 cents per word. Minimum cost $1.00. All other classified advertising—10 cents per word. Minimum cost $3.00.

Advertisements set in special type or with border—$4.00 per column inch. Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Advertisers having box numbers should be addressed in care of National Petroleum News, 817 Huron road, Cleveland, Ohio unless otherwise specified.

Equipment Wanted

USED KETTLE WANTED

Wanted one 800 or 1000 gallon steam heated and paddle agitated oil blending kettle.
Write price and full description to

Arrow Oil Company, Wooster, Ohio.

For Lease

WILL LEASE

25,000 acres Brewster County, Texas, on Marathon Fold. Make your best offer.

Owner, Earl K. Duke, P. O. Box 1099, Wichita, Kansas.

For Sale

TRUCK TANKS FOR SALE

One three-compartment 550-gallon Heil truck tank. Also one three-compartment 625-gallon Heil.

O'Connor Oil Corp.,
Fon du Lac, Wis.

MOTOR DRIVEN SHARPLES SUPER CENTRIFUGES FOR SALE

Excellent for recovery of crank case oil or breaking of oil emulsions. Equipped with A. C. Motor, at a very low price. Also a few steam turbine driven machines. Available.

Acme Oil Corporation
189 N. Clark St.,
Chicago, Ill.

These Savings Will Increase Your Working Capital

—Savings made by selling tanks, pumps, engines, etc. which you have replaced with new equipment.

Clean out your store room and yards — don't have your money tied up in equipment that you are not using.

One well known company wanted to dispose of some tanks and in writing to us to discontinue their advertisement said,

"We have had a great many replies from this ad and are satisfied that it is an excellent medium for the disposal of surplus material."

You can get the same results.

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